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Address.

SURGICAL TUBERCULOSIS.

BY HERBERT L. BURRELL, M.D., BOSTON.

(Concluded from No. 26, page 692.)

HOSPITALS.

HOSPITALS have not, as a rule, recognized the necessity for providing for the out-door treatment of tuberculosis. Dr. F. Rufenacht[27] states that "in several of the general hospitals and infirmaries in England, such as St. Thomas' Hospital in London, the North Staffordshire Infirmary at Stoke upon Trent, the Sheffield Royal Infirmary, etc., consumptive patients have been treated with more or less success by open-air methods. In the new infirmary for Camberwell the top story in each wing is to be set apart for the open-air treatment of consumptives, and is to have nearly all its wall space occupied by windows."

Burdett[28] states that "the Bethany Hospital in Berlin has had broad balconies added to the wards, where many of the patients are kept in bed, not only in the daytime, but at night." He gives plans and descriptions of the new University Hospital at Halle, which has wide verandas on the south side of the four surgical wards only, the windows being casements, opening down to the floor, so that a bed can be rolled or carried out. He states that the new hospital at Saint-Denis also has verandas on the south side of the wards. The story of the doctors who kept their patients out on the balcony until nine o'clock at night, and finally tried leaving them out all night, at the Bethanien Hospital in Berlin, is interesting. They were entirely convinced by practical experience, by patients sleeping out of doors, of the benefit of this treatment.

OUT-DOOR TREATMENT OF TUBERCULOSIS.

All of the foregoing leads me to believe that the necessity for out-door treatment of surgical tuberculosis is not sufficiently well recognized by general surgeons.

The improvement that occurs in tuberculous nodes of the neck, without operation, has for years attracted my attention, and in many instances where an operation was inexpedient I have advised the patient to live and sleep out of doors. In the majority of these cases there has been marked improvement, and in some cases apparently permanent recovery.

One of the first instances that attracted my attention to the importance of the out-door treatment of surgical tuberculosis was a patient upon whom I had operated for tuberculous peritonitis. The patient, a woman, aged thirty-eight, had a typical condition of the peritoneal cavity. She was operated upon, a large amount of fluid was removed, the peritoneal cavity was drained for a fortnight, and the abdominal wound then healed; yet for months the patient did not improve in the way we expect following an operation for tuberculosis of the peritoneum. During the summer she lived in a tent, and from the time that she lived and slept out of doors her improvement was very marked. During the summer she gained eighteen pounds, all evidence of tuberculosis disappeared, and three years later she was apparently in perfect health. At the time this occurred I considered that her improvement was simply a delayed one following operation.

A most striking instance of improvement occurred three years ago. A man, thirty-seven years of age, who was married, came to me for tuberculous epididymitis. The vas deferens on the affected side was corded and knotty. A careful examination of the urine was made, and tubercle bacilli were eventually found. Naturally an unfavorable prognosis seemed inevitable. An operation was done, and the tuberculous testis and cord were removed. After waiting three or four weeks, the patient having cystitis with tenesmus, a suprapubic cystotomy was done. Two small tuberculous areas, one the size of the little finger-nail, were found at the base of the bladder. Suprapubic drainage was established, and I finally advised the patient to go to his home and make himself as comfortable as possible, as a fatal ending was more than probable. The patient was of more than ordinary intelligence, and, turning to me, asked if there were nothing else that could be done in the way of general treatment for the disease. He himself suggested to me that if people with pulmonary tuberculosis weree benfited by living out of doors, he might be made better by living and sleeping out of doors. I, of course, acquiesced, and he had a tent constructed on his lawn and slept there from April 15 until into December — out of doors practically every night during the summer. He gained during this time thirty-four pounds, or from 118 pounds to 152 pounds. At the end of three years apparently the tuberculous process has been arrested, he is engaged in his ordinary occupation, that of a book-keeper, and I believe his life has been saved, not by my operation, but by a recognition of the value of out-door treatment of tuberculosis.

In spite of the warnings and protests of experts in the treatment of pulmonary tuberculosis, two errors with regard to the out-door treatment of pulmonary tuberculosis remain deep-rooted and widespread in the profession. The first is the sending of patients in advanced stages of tuberculosis to sanatoriums. The second is the failure to recognize the need of absolute rest, literally sitting still out of doors all day long, on every day, so long as there is evidence that the tuberculous process is still active.

Trudeau has intelligently insisted upon the need of absolute rest during the active period of tuberculosis.

The natural cure of tuberculous areas, it seems to me, demands three things: (1) Physiological rest to the part; (2) pure air and sunlight; (3) ample nutrition to the tissues to check the progress of the process. At the best, the tuberculous area in a lung must "throw out of commission" that part of the lung for the time being. There are not many principles in medicine or surgery, but if there is one in which I thoroughly believe, it is that of physiological rest,[29] and this principle is just as applicable to the treatment of pulmonary tubercu-

[27] London Zeit. for Tuberculose, 1901, p. 297.
[28] Hospitals and Asylums of the World, vol. iv, p. 60.
[29] Hilton's Rest and Pain.

losis as it is to the treatment of a tuberculous area in the hip- or knee-joint.

TENT TREATMENT.

Occasionally, here and there, within the past few years have appeared suggestions as to the out-door treatment of surgical tuberculosis. Dr. H. P. H. Galloway in 1902,[30] before the American Orthopedic Association, brought forward and advocated strongly the use of tents for the treatment of tuberculous joint-disease (Fig. X). Dr. Galloway claims that while out-door life is of great assistance



FIG. X. — Tents used by Dr. H. P. H. Galloway, at the Toronto Orthopedic Hospital.

in the treatment of all tuberculous bone and joint affections, it is particularly useful in that class of patients whose recuperative power seems to have been exhausted and are being slowly worn out by discharging sinuses which other means of treatment have failed to heal. He does not claim that tents offer the best solution of the problem of securing the nearest approach to continuous out-door life, but that properly designed tents suitably located are much better than the average hospital ward, and that they are an efficient and inexpensive supplement to the regular wards. He thinks that with private patients an effort should be made to secure the benefit of sunshine and fresh air, when for any reason residence in a sanatorium is impracticable or undesirable. Many patients who have a lawn in connection with their homes can be induced to fit up a private tent and occupy it even during the winter months.

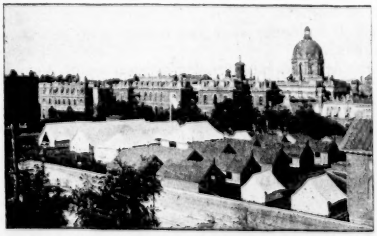


FIG. XI. — Tent wards at the Boston City Hospital.

For many years the Boston City Hospital, under the administration of Dr. Rowe, has had a tent service in summer, in which, at times, surgical patients have been treated. The advantages of this service have been very marked. Figs. XI and XII show



FIG. XII. — Interior of a tent ward at the Boston City Hospital.

the perspective of this outdoor camp and an interior view of one of the tent wards.

The means to gain this outdoor life for patients are many. An excellent type of tent is described by A. Mansfield Holmes. Figs. XIII, XIV and XV show the construction of the tent pavilion.

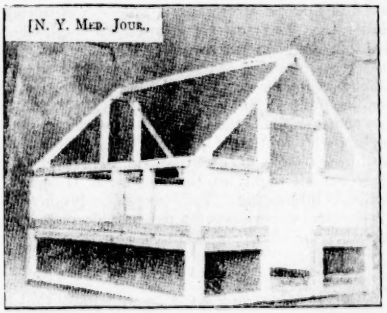


FIG. XIII. — Frame of "tent cottage," wainscoting in position. The inner wall of heavy canvas is in position on the front and rear end and the right side. The two-inch opening above the wainscoting is clearly shown.

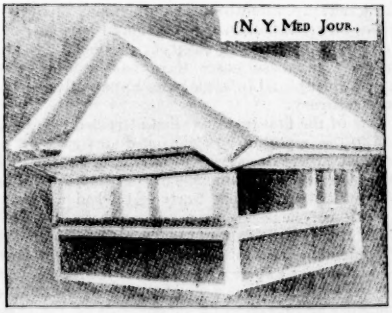


FIG. XIV. — "Tent cottage" as used in summer. The upper sections of the outer walls are converted into awnings. The rear end shows the inner wall intact. Side shows the upper half of the inner wall lowered, which practically removes the side of the "tent cottage," converting it into a "tent-pavilion." When thus converted the sun can penetrate to any portion of the interior.

[30] The General Management and Constitutional Treatment of Tuberculosis of Bones and Joints. Special ref. to Use of Tents.

The approximate cost of constructing these tent cottages is $60.

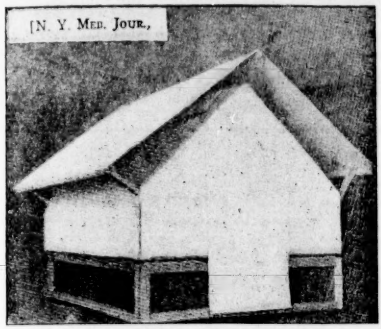


FIG. XV. — The "tent cottage" as used in winter; the fly intact, the sides and door closed, the "roof window" open. The opening between the two sections of the outer wall is plainly shown.

HOME TREATMENT.

Dr. Millet, of East Bridgewater, has recognized the necessity for caring for his patients by out-door life, and his article on "The Night-Air of New England in the Treatment of Consumption"[31] is extremely suggestive and very valuable. Dr. Millet has been good enough to let me have illustrations of the "shacks" that he has had built for the treatment of tuberculous patients (Figs. XVI and XVII), also of the balconies or verandas where



FIGS. XVI AND XVII. — Two of Dr. Millet's "shacks." Note the extreme simplicity and consequent cheapness of construction.

patients sleep, that have been "built out" in connection with many cottages. Figs. XVIII, XIX, XX, XXI and XXII are balconies built out from buildings in Brockton and Bridgewater, and here



FIG. XVIII. — Sleeping balcony.

the patients sleep, from May until November or December, only the rainy nights driving them in.



FIG. XIX. — Roof used as a sleeping balcony.

The improvement in these cases, I am told by Dr. Millet, is very great indeed.

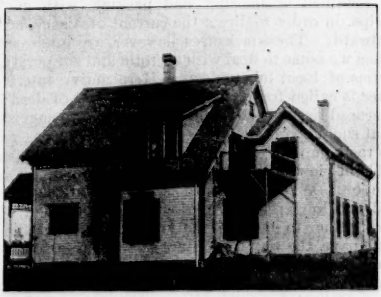


FIG. XX. — Sleeping balcony.

The public are quite aware of the benefits of out-of-door treatment, and Phil May has expressed in

[31] Md. Med. Journ., January, 1900.

Punch, March 4, 1903, the length to which this fad may be carried (Fig. XXIII).

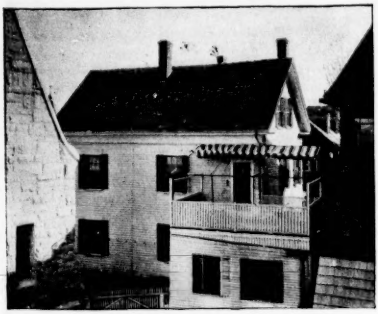


FIG. XXI. — More pretentious sleeping balcony.

A. A. Babrow[32] believes that surgical or local tuberculosis is simply a manifestation of a general infection and may be grouped under two forms, showing certain dissimilarities in their course; the one is a chronic process characterized by infiltration and formation of new connective tissue; the other is also chronic at times, though oftener subacute, and consists in a cellular infiltration which forms tubercles and through their necrosis leads to cheesy degeneration. In either instance the advent of pus cocci transforms the sluggish process into an acute inflammation. In the absence of a specific remedy our therapeutic efforts must aim at increasing the patient's resisting powers, thus aiding him to overcome the microbic invaders. All hope of salvation by removing the diseased part is distinctly illusory, since surgical tuberculosis must be considered as the local manifestation of a general infection. We combat the chronic non-suppurating variety with local rest and counter-irritating measures, like hot applications, iodin or the cautery, which all act beneficially by attracting leucocytes and phagocytes to the affected tissues, as well as by stimulating the local circulation. A similar result is obtained by incising and packing with gauze strips, in order to direct the current of tissue fluids outward. These measures, however, are inadequate when we come to deal with necrotic and suppurating forms of local tuberculosis. Here active interference is called for, and operative removal of dead or diseased tissue is advisable. It is to be recognized that such operations are merely palliative measures, as the complete removal of affected areas is impossible in view of the persistent general source of infection. When this truth is recognized, surgeons will no longer be so anxious to operate, but will seek rather to increase the strength of the patient and pave the way for nature's own cure. In this connection climatic influences deserve all recognition. Prolonged stay (one to one and one-half years) at the seashore exerts a marked salutory effect, especially in the case of children; the sea air, the bathing and, not least, the sunlight, contribute their respective share to the final result. Solar rays play a highly important rôle in the treatment of local tuberculosis, and patients should be instructed to expose the diseased parts to the sunlight.

[32] Russki Vratch, Jan. 18, 1903.

EFFECTS OF SUNLIGHT AND ELECTRIC LIGHT.

In connection with the exposure of wounds to sunlight, it is interesting to consider the use of the Finsen light. Dr. Valdemar Bie,[33] who is associated with Finsen at Copenhagen, as his assistant, states that Finsen has discovered that sunlight or arc electric light produces a widening of the skin capillaries which may last for five or six months.



FIG. XXII.

(*Overheard during one of our recent stormy days.*) "What cheer, matey! Doin' any business?"

"Garn! Wot yer gettin' at? I ain't 'ere to do business. I'm takin' the hopen hair treatment!" — *Punch.*

"Finsen has demonstrated a widening of the capillaries of the skin which lasts for a long time, as a result of light. Finsen exposed the skin of his arm to an electric arc light; upon the arm were various glass plates and also two letters of the alphabet drawn with India ink; where these covered the skin, the skin retained its white color; the lighted part of the skin, on the contrary, became red, swollen and later pigmented. After a period of four months the skin was still so pigmented that the white areas were still visible where the glass plates had been; but after five or six months the entire skin was white. If one now rubbed the skin, the marks again became visible, in that the portions of the skin which had been covered with the glass plates did not become so red as the surrounding skin. The dilatation of the vessels of the skin which results from exposure to light can, therefore, last five to six months."

[33] Light Therapy. Deutsche Aerzt. Ztg., Berl., 1902, Aug. 15, ii, pp. 361-5.

The effect upon the capillaries is only produced where the ultra-violet rays strike the skin. Light produces a stimulating effect upon all the lower animals, and Finsen has proven this upon the embryos of salamanders and upon worms. He has also shown that the stimulating influence is due to the actinic rays. These rays penetrate cartilage and skin, but are absorbed by the blood. This was interestingly proven by Finsen, who found that by rendering the ear bloodless the light would pass through the cartilage and would not pass through the ear when it was filled with blood. The ultra-violet rays have ten times as much bactericidal power as all the rest of the spectrum taken together, but they have very little power of passing through the skin. The chemical rays of light do not reach the deeper parts of the body at all, or at most in a very limited degree. The literature on the use of Finsen's rays is becoming very interesting, and one of the best articles is that called "Phototherapy," by Prof. Niels R. Finsen, Copenhagen, "translated by James H. Sequeira, M.D., Lond., M.R.C.P., 1901. There can be little doubt but that the use of Finsen's rays is of definite value in certain cases. Its exact value and limitations have not been determined, but the use of sunlight, it is clear, has been demonstrated from time immemorial. Professor Poucet allows the sunlight to fall upon a diseased joint two or three hours daily, and Milliez has written a thesis an this subject. Poucet states: "I cannot criticise the results that Milliez describes as good; but a direct influence upon the tubercle bacilli in this way is not possible; it is hardly to be denied that the nourishment of the limb may possibly be improved by the rich blood supply which results from the light bath."

Robinson[34] states that the importance of sunlight in tuberculosis patients is becoming more and more generally recognized. Abrams[35] has done some interesting experimentation on the penetrability of the solar rays. He finds that a dry skin is very resistant to the penetration of the solar rays; that the penetrability of the skin is increased by using lanolin externally and subcutaneous injections of distilled water. A very interesting experiment was done, which should be verified. Subcutaneous inoculations with a virulent culture growth of tubercle bacilli were made upon rabbits The animals were then subjected to the action of the solar rays concentrated at the point of inoculation on ten consecutive days. No tuberculous process resulted, while in other rabbits similarly inoculated, but not subjected to sun, there resulted tubercles (in which tubercle bacilli were found).

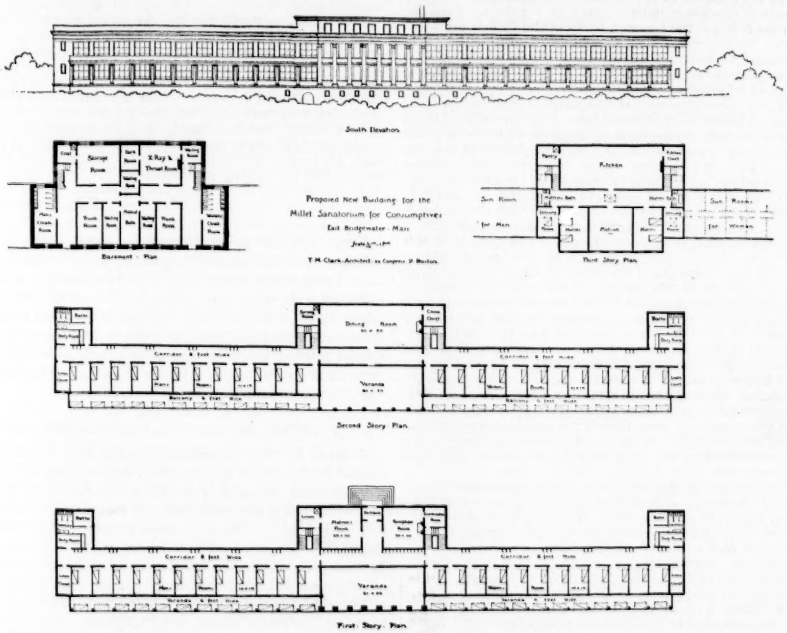


FIG. XXIII.

"Other experiments were conducted to determine whether the solar rays in greater concentration could be employed by interposing colored glass, which, in a measure, excluded the heat rays and allowed unimpeded passage to the chemic rays. The result was an unequivocal demonstration of the fact that when such media were interposed it was always at the expense of the actinic action on soliopaper." Abrams has used the solar ray in the treatment of a tuberculous ulcer of leg which had

[34] Phila. Med. Journ., 1899, iii, pp. 54-6.
[35] Ibid, 1899, i, pp. 175-8.

resisted the conventional treatment, including rest and curetting, for over a year. The ulcer healed in less than three weeks under treatment with the solar rays. He has also used solar rays quite extensively in aborting furuncles and in the treatment of cervical lymph noditis of presumable tuberculous origin.

My colleague, Dr. F. S. Watson, has written me a letter, of which the following is an abstract. The letter shows clearly that the out-of-door treatment of surgical tuberculosis is not properly recognized.

DEAR DR. BURRELL: It is a remarkable fact that, with the constantly present object lesson afforded by the results of climatic and hygienic treatment of pulmonary tuberculosis, when properly and conscientiously carried out, as it is in the best sanatoriums and elsewhere in the hands of some experts individually, so little effort should have been made to apply the same principles to those forms of disease usually classed as surgical. That this is true is indicated by such facts as the following: —

(1) No paper has been presented before the American Surgical Association urging the adoption of that method of treatment for surgical cases, whether in conjunction with or without surgical treatment.

(2) Physicians connected with sanatoriums for the treatment of tuberculous disease, and those practicing in the health resorts frequented by persons with phthisis, see but very few patients having surgical forms of the malady. This is illustrated by an inquiry recently undertaken by the writer as to the results of the climatic treatment in that class of cases, in the course of which he addressed a circular letter to every member of the American Climatological Association, which almost all of them were kind enough to answer. The questions were put with regard to tuberculosis of the genito-urinary organs only, and asked the personal experience of those gentlemen as to the results of its climatic treatment. There were just four out of the whole number who did not say that they had no experience in the care of such cases. Of the four, there was one who had had twelve patients of the sort, and the other three reported their observations with regard to from one to four cases, and had not seen more than that number. Some years ago a similar request for information was sent to twenty representative general practitioners, and none of them had knowledge of more than three cases at the most, and there were but two or three patients whose history was known definitely for long enough periods to give them any value.

The replies of the members of the American Climatological Association furnished the following information with regard to sixteen cases: In five there was complete arrest of the disease. Seven showed great improvement, but still had evidence of the disease. Two were not improved. Two died.

The reply of Dr. Henry Loomis is of interest, though it does not supply details. He says, "A number of cases have been sent to the Loomis Sanatorium by genito-urinary specialists for climatic treatment. The results have surprised everybody" in their favorable character. He refers specifically to one case considered as hopelessly ill by Dr. Keyes, who sent him for that form of treatment, in which the patient was "perfectly well at the end of a year."

It is not necessary to quote from the other letters. I will refer briefly to six cases under my own observation for periods of eighteen years in the longest to ten years in the shortest, in which the patients, though not having been under systematic climatic treatment, have all led out-door lives and been in very favorable conditions. Three of them were subjects of renal and three of testicular tuberculosis. In all there has apparently been an entire arrest of the process. In one the disease began in the testes and the seminal vesicles were invaded. Here it has remained without further extension for five years, the patient being in robust health all the while.

This year at the meeting of the American Association of Genito-Urinary Surgeons in Washington, one of the best and most experienced observers among the surgeons of this country, Dr. Chismore of San Francisco, made the first definite and strong plea that has been presented to the Association for a more extended trial of climatic treatment for cases of genito-urinary tuberculosis, as opposed to the surgical treatment.

We are fairly familiar with the results of surgical treatment of some forms of tuberculosis, notably those in which the disease is seated in the bones, which is the most favorable form of tuberculosis which comes under the surgeon's care, and those which involve the genito-urinary tract, in some of which the radical surgical treatment is far from encouraging, to say the least, — nephrectomy for renal tuberculosis, for example, despite the few brilliant successes that have attended it.

What we lack is knowledge of what can be accomplished by the climatic and hygienic treatment of these cases, either in conjunction with surgical treatment or without it, according to circumstances. We can get no information from general practitioners, specialists or surgeons, for they none of them have had any important experience in the matter, nor shall we have this knowledge supplied until sanatoriums for the treatment of surgical tuberculosis, or else special provision in the present ones, is made for the reception of such cases, and are put in the hands of competent surgeons. The medical specialists do not feel competent to assume the care of cases of a surgical character, therefore surgeons cannot send such cases as need surgical care as well as climatic treatment to resorts which are appropriate otherwise. There are signs of awakening interest, however, in this matter and it is fairly safe to predict that the pendulum will begin to swing in that direction before long, go to the inevitable too great extreme and then settle down to its proper excursion.

Very truly yours,
F. S. WATSON.

From the foregoing it may be seen that orthopedists and occasionally genito-urinary surgeons have recognized that surgical tuberculosis requires something besides operation. The treatment of tuberculous areas should include not alone active operative measures, when necessary, but the surgeon should always consider the expediency of exposing them to the sun's rays. General surgeons have not recognized its importance.

DEFECTS OF HOSPITAL CONSTRUCTION.

A ward for the treatment of surgical tuberculosis should have as its prime essentials a maximum of sunlight and the ability to move the beds out on a veranda, where the patients may sleep, if expedient, day and night. It is perfectly obvious that it is impracticable to construct a hospital at practically $1,000 per bed for the treatment of such a universal scourge as tuberculosis, and I now wish to speak of some of the defects that I believe exist in modern hospitals. The failure to recognize that a hospital must have the maximum of air and light is lamentable.

Recently I had occasion to visit a modern hospital which had been constructed by eminent architects in one of the most intelligent communities in New England. It seemed to me defective in many points. The hospital was beautifully situated, but it was winged forwards at the east and west so that much of the south sunlight was shut off. Many of the administration rooms of the hospital were on the south side, which should be devoted entirely to wards and bedrooms. The best part of the hospital building, the top, was occupied by a laundry. The most central part of the buildings, where there is the maximum of sunlight, was used as a reception room for visitors. The doors were smooth and made of jointed boards, but the butts projected. The

angles and corners of the room were rounded off, but it would require hours each day for a diligent housemaid to clean the carved mantels. The windows were not flush with the wall but were dust-traps. In one small room the best sunlight was excluded by a tree. The conventional shade, lace curtains and picture-molding existed in many of the rooms, but the beds were provided with an aseptic, smooth, painted, steel temperature chart. The windows in the building were small and of such a height that if opened slightly at the bottom the wind would blow directly upon the beds. The walls were not built of hollow brick, and already the water of condensation was forming on the walls. The operating room was elaborately fitted with a chandelier directly over the operating table, so arranged that the dust could be readily shaken into an open abdominal cavity. There were gratings over the ventilating shafts instead of cheese cloth. Expensive foot water-taps, which were complex in construction, afforded lodgment for dirt. The wall area in one ward had about one fifth of the total possible window space. There were no piazzas. Convalescent patients could be placed on a roof garden which was reached by a ladder. The kitchen was in the northwest top corner of the hospital and the ward maids had the most sunny rooms in the hospital. The engineer of the building slept in a room in the cellar, with a 2 x 4 window. The operating room had tiled floor, glazed brick and a marble dado, but the steam pipes were so close to the wall that the room could not be mechanically cleaned.

This construction is going on at the present time in many of our modern hospitals; and it is very natural that it should occur. The Board of Managers tell their superintendent that they want a building to cost a certain amount of money; they employ the best architect they know, a man who may or may not have made a study of hospital construction. The architect and the superintendent of the hospital are placed practically in charge. Rarely is the staff of the hospital more than allowed to look at the plans of the building. The architect naturally turns to the superintendent as the one representing the Board of Managers, and what the superintendent wishes is put into effect. Superintendents of hospitals, as a class, are not aware of the advances that are being made in medicine, and of the necessity for air and sunlight in the wards of a hospital. They feel and believe that a monumental structure is necessary, but in consequence of their environment and isolated position, so far as the medical profession is concerned, they do not realize that a new order of hospital construction is or will be imperative. The economies of hospital construction have never, so far as I know, been deliberately studied as have those, for example, of mill construction.

If the state is to deal with the great problem of controlling an almost universal scourge, tuberculosis, a more economical construction of hospital buildings is imperative. This can be done only by architects who are willing and anxious to meet the demand of a minimum cost of construction combined with superintendents who are familiar with, and appreciate the necessity for, the maximum amount of air and sunlight in their buildings.

Prof. T. M. Clark, architect, of Boston, has given me the plans for the building of a proposed sanatorium for Dr. Millet of Brockton, Mass. (Fig. XXIV). I find that he has carefully considered the essentials in construction of a hospital for tuberculosis: (1) He has made provision for the maximum of sunlight and air. (2) He has arranged the rooms so that a bed may be wheeled out of doors on a piazza or balcony. (3) He has provided a sun parlor at the top of the building. (4) He has studied the economy of construction. We should recognize that all the south side of a hospital should be devoted entirely to the treatment of patients, and that the north side should be reserved for hospital administration.

Conclusions. — The prime essentials for the treatment of tuberculosis are physiological rest, outdoor treatment and ample nutrition to the patient. Whether the tuberculous area is in the lung, in a joint, in a lymph node or in the intestines is a detail. Where it is possible, the tuberculous area should be excised, especially if it threatens to invade vital structures; combined with the removal of the tuberculous foci, patients should be treated by physiological rest, fresh air and sunlight. The excision of a small area from the hip-joint, while it may give a brilliant immediate surgical result as to first intention and a cure, mutilates the patient. On the other hand, by the recognition of physiological rest and outdoor treatment, such patients may be efficiently treated, and life and limb saved.

In the modern construction of hospitals we do not sufficiently recognize the necessity for a maximum of sunlight and air; provision is not made to allow patients in their beds to be moved out on to verandas, that they may be in the air and properly protected.

There is perhaps no community that is so well supplied with cottage hospitals as New England, and yet how little are they used for the outdoor treatment of tuberculous patients!

If the physicians and surgeons of the cottage hospitals in New England will utilize their hospitals for the treatment of tuberculous patients, on the lines of physiological rest and outdoor treatment, and will do less major surgery, — for example, brain tumors, — they will do more good in the community than they do at present. The health of this Commonwealth is largely in the hands of the members of this society, and if I can impress upon you the necessity, in dealing with this problem of tuberculosis, first to advocate the establishment of an adequate number of sanatoriums for the treatment of tuberculosis, either by the State, cities or towns, a step will have been taken towards its control. Again, as members of the Massachusetts Medical Society, you should recognize that it is not necessary that your patients suffering from tuberculosis should be sent far from their homes, but that by erecting bed platforms, as Dr. Millet has done at the patients' homes, they may be satisfactorily treated in their own homes. The work which is being carried out by Dr. Bowditch at the Sharon Sanatorium is worthy of the highest commendation, but that is for a specially selected class of patients. The work which is done at Rutland must command our admiration, but it is to you, as the practitioners of this Commonwealth, who visit from time to time the homes of the people, that I turn and beg that

you will consider the necessity, in tuberculosis both medical and surgical, of treating patients by physiological rest, and giving them the maximum of air and sunlight.

Original Articles.

THE CLINICAL ASSOCIATIONS AND SIGNIFICANCE OF THE CARDIO-PULMONARY MURMUR.[1]

BY JAMES J. PUTNAM, M.D., BOSTON.

THE cardio-pulmonary murmur has been regarded by most physicians as of somewhat accidental occurrence, indicating perhaps some unusual relationship of the heart and lungs, and almost certainly due to compression or aspiration of a piece of lung by the contracting heart, but as of no clinical significance except in so far as it was liable to be mistaken for a sign of valvular lesion. Such was my own supposition until — a good many years ago — I became impressed with the relative frequency of its occurrence among certain classes of patients, namely, young and middle-aged male neuropathics and asthenics, who were often spare in build, long-chested, and usually with rather weak muscular systems and (I should now add) elastic chest walls. Subsequent investigations have fully confirmed this impression, while, meantime, the finding of corroborative statements published by various other observers has increased my confidence in its substantial correctness. When anything is said at all, by those who have written upon the subject, about the general nutrition and characteristics of the persons among whom this murmur has been found, some such description as that just indicated is usually given, or — as is often the case — it is noted that the patient has signs of pulmonary tuberculosis.

For the past two or three years I have paid closer attention to this clinical relationship between the cardio-pulmonary murmur and the neuropathic and asthenic tendencies, and offer my experience thereon in a preliminary form, together with certain other facts which may help to broaden our conception of the possible significance of the sign.

Potain, who, after Laennec, was the pioneer in the clinical study of these sounds, groups together as cardio-pulmonary or exo-cardial, all the so-called "functional" heart murmurs, including those usually classed as hemic. Recent studies[2] have, however, made it clear that this is an incorrect classification, and that the major part of the "functional" murmurs are due to defective co-ordination, defective action, impaired nutrition and relaxation of the cardiac muscles and of the arterial walls.

The cardio-pulmonary murmurs are of different origin, and yet they, too, are heard pre-eminently under some of the conditions which favor the occurrence of the "muscular relaxation" sounds, namely, during disturbed innervation. Not infrequently they disappear during the course of a somewhat prolonged examination.

They are not especially characteristic of acute anemia and the excessive fatigue following athletic exercise,[3] but they are temporarily accentuated by the nervous excitement attending an examination of the heart, as in the case of the men offering themselves as candidates for positions on the police force.[4] Both sorts of murmurs may disappear before the examination is over and it is, indeed, not certain that it is always possible to distinguish between them, though the fact that the cardio-pulmonary sound ceases at the end of a forced expiration is probably decisive under ordinary circumstances. There is, however, another relationship of the cardio-pulmonary murmur which is of especial interest, namely, that to the interrupted or cog-wheel respiration, or "heart-breath," that form of respiration, namely, where the inspiratory sound, instead of being continuous, is rhythmically broken by accentuated puffs corresponding with the contractions of the heart.

Although it is true that tubercular consolidation favors the conduction and perhaps the occurrence of these respiratory sounds, yet careful physiological studies have shown that the phenomenon is, in its main features, to be detected under normal conditions, and these studies acquire a special interest when it is admitted that there can be no radical difference between the interrupted respiration and the cardio-pulmonary murmur. Both sounds are due to displacement of air through the heart's action or the blood-current, and both are heard, not infrequently, on the same subject. When this is the case, it is my experience that to the ear (or stethoscope) placed near the apex or over the body of the heart it is the cardiac element which makes the strongest impression, while at the base, or, as sometimes, in the axillary line, the sound which is heard is of such a kind that one is no longer tempted to classify it as a cardiac murmur at all, but as an interrupted inspiration. Yet the differences must be of degree, essentially or alone.

The physiological studies which have been alluded to as establishing the fact that the respiration of normal individuals is modified, directly or indirectly, by the heart's action, have been discussed by Dr. S. J. Meltzer, and the conclusion reached by him, partly on the basis of original experiments, is in favor of the view that this effect is due, not to the changes in size and position of the heart itself, but to displacement of air attending the propulsion of blood through and out of the chest. Under ordinary conditions the amount of influence exerted on the respiration in this way is but very slight, but I presume there can be no doubt that the "cog-wheel" respiration (or one form of it if there be more than one) is only an exaggeration of this (normal) phenomenon which is discoverable by careful tests.

Although the rules given by Potain and others doubtless serve, generally, to distinguish the cardio-pulmonary murmur, yet, inasmuch as there is not one of them that is not violated, there seems to be some question whether it is always possible to differentiate the cardio-pulmonary murmur with positiveness from that which has been called neuro-muscular, and I am free to admit that in my own

[1] Presented by title at the eighteenth annual meeting of the Association of American Physicians, May 14, 1903.

[2] As those of Prince, Stengel and Arnold in this country.

[3] Cf. Stengel, Arnold.

[4] Cf. Prince, McCollom.

past observations I may have failed, in a few cases, to differentiate between them with sufficient care. It is, indeed, not very uncommon to find a transient murmur of very slight intensity, heard at or near the apex, especially, I think, in men, which disappears before one has the opportunity to fully satisfy himself as to its nature. After allowing for errors of these sorts, however, I feel justified in the statement that the true cardio-pulmonary murmur is very rarely to be detected among vigorous persons of either sex, even where such persons are temporarily ill with what might be called asthenic diseases. On the other hand, it occurs with relative frequency among markedly neuropathic and asthenic males, but again, not nearly so often among females, even when neurotic and poorly nourished. This is especially striking in view of the fact that the murmur of the left base, which is so very common among feeble and anemic women, is very rare among feeble men.

In order to ascertain approximately the actual and relative frequency of the cardio-pulmonary murmur, I have looked over the records of 400 private patients whom I have examined during the year and a half since the beginning of 1902; one half of the 400 cases have been classified in general terms as neurasthenic or neuropathic, and the other half as ill with disorders of other sorts.

The cardio-pulmonary murmur was heard in about 30 of these 400 cases, there being of course a few that were doubtful. Of these 30 cases, at least 26 belonged in the neurasthenic group, and only 4 in the non-neurasthenic. Even as regards these there was some question as to the group in which they should be placed. As regards sex, 26 of the 30 patients were men and 4 women. These figures recall a tabulation by Matthews,[5] of Providence, R. I., who reports 32 patients, of whom 23 were men and 9 women, though saying, at the same time, "I am not aware that sex has any influence in the production of this sound." On the other hand, Squire, of London, reported 23 cases in 1898, of which 13 were the cases of men and 10 of women. Fourteen of these patients, however, 9 men and 5 women, had pulmonary tuberculosis.

As a check to my own observations I have recently asked several gentlemen who have occasion to examine large numbers of patients in the out-patient department of the Massachusetts General Hospital to listen to this murmur with especial care, and their investigations confirm my own. In the men's room the cardio-pulmonary murmur is of rare occurrence — at least in a pronounced form; not more than three or four examples having been found in the examination of four hundred or more persons. In the women's room it is somewhat more common, perhaps occurring in 2% of the cases. In the neurological department, however, in the special class of patients to which I have referred, namely, the pronounced neuropathic and asthenics, it has been found in 8 or 10%.

As regards the diagnostic characters of the cardio-pulmonary murmur, I can corroborate the statements of those who have noted its occasional presence as well during the diastole as during the systole of the heart, and the fact that it may be heard in the axillary line and even at the back. On the other hand, I cannot find that the murmur depends to any obvious extent upon the rapidity or turbulence of the heart's action, or that it is at all necessarily influenced by changes in the position of the patient. Further studies may correct this view.

The fact that the murmur is made to disappear by forced expiration has been repeatedly made use of as affording a hint as to its origin. The difficulty in the way of explaining this expiratory disappearance seems to me, however, to be considerable, and to be still greater when regarded in the light of another fact which I have observed, namely, that a similar disappearance can sometimes be brought about by the strong compression of the chest wall by an assistant while auscultation is going on. Furthermore, it is noteworthy that after being banished through the procedure the murmur does not always return at once, or perhaps even during the remainder of the examination.

The fact, now abundantly substantiated, that the cardio-pulmonary murmur, if not heard exclusively among neuropathic, constitutional asthenics and tuberculous patients, is heard far oftener in them than in any others, still demands an explanation. If this is found it may throw much light upon the origin of the sign. In fact, the patients belonging to these groups present several interesting peculiarities which may be more or less important in this connection.

In the first place, the heart muscles in these cases are liable to be weak, their innervation defective and the beat tumultuous, irregular, rapid or of changing rhythm. In the next place, the chest wall may be unduly yielding, more or less collapsed from early rickets or other nutritive disorders or otherwise deformed. The thorax has, indeed, been repeatedly noted as unusually long, and slenderly provided with muscles. Finally, the lung may contain tuberculous deposits or cavities, or may be abnormally placed with relation to the heart. On the other hand, there is no single one of these peculiarities which is universally present. The neuropathic patients do not always have deformed or feeble chests; the poorly nourished persons are not always markedly neurasthenic or neuropathic. Again, it must be admitted that the cardio-pulmonary murmur itself is not heard with such frequency, even among that class of patients who have it relatively often, as to imply a necessary concomitance with any particular signs or symptoms of other sorts.

There is, however, one possible way of regarding the sign under discussion which clothes it with special interest, and at the same time makes the task of explaining its genesis slightly easier. The cardio-pulmonary murmur may, namely, be classed with the numerous peculiarities or stigmata which are met with so often among neuropathic persons, and yet neither always present nor always implying, of necessity, a neuropathic constitution.

If the ranging of this murmur under such a head as this does not yield a true account of its pathogenesis, it does provide a new point of departure for which an explanation may be sought.

The researches of later years have shown, with increasing clearness, that it is not only alone in connection with such toxic affections as myxedema that changes of bodily type, of definite form, occur. There are many other tendencies as well which are

[5] Prov. Med. Journ., 1901. II, 116-121.

as far reaching if not so serious in their action. The stigmata of constitutional neurasthenia are multiple, and within certain limits fairly constant; and they include such different states as nutritive disorders of the skin and its appendages, abnormalities in the formation of the thorax, prolapse of the abdominal viscera and, on the other hand, a great variety of peculiarities of the life and functions of the nervous system. It is only to a few of the abnormalities that I wish to call attention in this connection, and these are the changes in the thorax, the enteroptosis of Glenard and the vasomotor disorders; or, in general, the disorders of innervation of the heart and blood vessels.

It is in just the class of cases which I have described as particularly liable to the cardio-pulmonary murmur, namely, among the slender, rather feeble neurasthenics, that the tendency to ptosis of the abdominal viscera is pre-eminently found, but more commonly in women than in men. Stiller, who has had a large experience in abdominal examinations, discussed this point some years ago, and pointed out at the same time another stigma of neurasthenia to which this same group of persons is also liable, namely, a relatively loose attachment of the tenth rib of the right side to the thoracic cage. I have found the cardio-pulmonary murmur to be present in connection with both of these signs, though the association is by no means invariable or necessary. It will be remembered in this connection that it is the right kidney which is especially liable to prolapse. The innervation of the heart and arterial system is peculiarly apt to be affected in neurasthenics. Thus, Erben [6] finds that slowing of the pulse to the extent of three to six beats is apt to be brought on by bending over once or twice or by throwing the head backwards, and this change is but slowly recovered from. Again, irregularity and rapid beating of the heart are easily brought on by efforts of various sorts. In view of such facts as these, it has seemed to me not impossible that among the causes for the cardio-pulmonary murmur it might be reasonable to think of some abnormality or defect of the innervation by which the action of the heart is brought into relation with that of the lung. It can hardly be doubted that some such mechanism as this exists, for we know that at every expiration and every inspiration the conditions of the cardiac circulation are altered, and it would be a strange anomaly indeed if this change failed to be registered and regulated through the action of the nervous system. Surely a purely mechanical explanation of the cardio-pulmonary murmur is inadequate. For why should an overlying piece of lung be aspirated or compressed by the passage of the blood through the chest of a nervous and feeble person, and not by that of a vigorous and healthy man? The task of explanation becomes much easier if we may assume that the regulatory mechanism governing the tension of the lung, or the tension of the vessels, has been damaged, or that the relation between the two has become defective. One may imagine, for example, some such disturbance to exist as is seen when a swinging pendulum receives a knock which imparts to it a twisting movement, that only gradually passes away. Similarly, perhaps, under the influence of excitement, the co-ordination of the respiration and the heart's action or the vascular tension may become disturbed, and yet be restored by the compression of the chest or the action of forced expiration. I do not pretend that even this explanation is an adequate one, but only that it may serve as the prototype of some other which is really satisfactory.

[6] Wien. klin. Woch., 1898, No. 24.

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NASAL POLYPI: A STUDY OF ONE HUNDRED AND FORTY-SEVEN CASES.

BY J. PAYSON CLARK, M.D., BOSTON.

ALTHOUGH the existence of nasal polypi was recognized early in the history of medicine, and although more has probably been written about them than about any other affection of the nasal chambers, our knowledge of them is still, in many respects, far from satisfactory. What are the immediate causes of the growth of nasal polypi? What are the predisposing causes? Can all cases be permanently cured, or only certain varieties? Such are some of the questions which continue to puzzle many of us, and to no one of which would any single answer be universally acceptable or satisfactory. It was with the hope of eventually being able to throw a little light on one or more of these unsettled questions that I began, about seven years ago, to get as complete a history and keep as perfect a record as possible of all the cases of nasal polypi which came under my observation. This I kept up with occasional interruptions but with more or less regularity for several years, during which time I collected the records which form the basis for

[1] Read (by title) before the American Laryngological Association May 14, 1903.

this paper. In order to have the histories as uniform as possible, and not omit any point that might be of importance, I had cards printed, giving brief headings, indicating the various questions to be asked and the symptoms and appearances to be observed, leaving space for a description of the treatment and subsequent history. Although I had taken, as I thought, a good deal of pains in the preparation of these cards, I found, as time went on, that they might have been improved upon in a number of ways in their general arrangement, and that I had omitted some questions which might have been of value, such as the question of previous injury to the nose and the condition of the lower turbinates. As to the two items mentioned, records were obtained in many of the cases but not as a routine. In presenting the result of this clinical experience I shall not advance any new theories, but simply add the support of such evidence as I have been able to collect to statements already made by others, or show where this evidence does not support them.

The greatest hindrance which I experienced in making a study of these cases and noting the result of treatment was the difficulty of sufficiently impressing upon patients the importance of following up treatment and reporting as often as desired for observation. In spite of strict injunctions to the contrary, the majority of patients in my experience cease coming as soon as their nasal respiration is free, and only appear when their noses are again occluded. Strange to say, this statement seems to apply in a great many cases to those who also have a purulent discharge from some sinus as well as to those who have only vasomotor symptoms. The nasal discharge is disregarded if the nose is clear.

PATHOLOGY.

This portion of the subject has been so thoroughly presented by such able observers as Jonathan Wright, Hopmann, Chiari, Hajek, Swain, John McKenzie and others, that I shall pass it over with only a brief statement, which I believe nobody will now dispute, namely, that true myxomatous tissue never occurs in nasal polypi, which must, as a rule, be considered histologically as stretched and edematous mucous membrane. To quote from Wright: "While the amount of fibrous tissue varies between *nil* and a condition which might well be given the name of fibroma, the vast majority of polyps consist simply of the normal amount of loose areolar tissue infiltrated and stretched with serous exudate." As to the site of these growths, Zuckerkandl's researches have shown that the usual situation is in the region of the middle turbinated bone, from some portion of the outer wall of the nose concealed by the middle turbinate, but more commonly from the turbinate itself, either from the lower border or from the outer or (more rarely) the inner surface. In all of my cases the site of the polyps is recorded as being "on the middle turbinate," "under the middle turbinate," "in the region of the middle turbinate," and in a few cases "above the middle turbinate." In several cases I have a note of polyps visible only in the posterior nares, and having their origin distinctly above the middle turbinate. Of 146 cases, 107 had polypi in both nostrils, 19 in the left and 20 in the right only. Seventeen cases in which the polypi were in one nostril only were seen last by me over five years after they had been conscious of unilateral obstruction, and in not one of them was there the slightest evidence of polypoid degeneration of the mucous membrane in the other nostril. This experience leads me to believe that it is not as rare an exception as Bosworth states for these growths to remain unilateral.

ETIOLOGY.

As far as my records go, I can find no evidence of any constitutional diathesis or impairment of the general health standing in any causative relation to this affection; indeed, the large majority of my cases were in excellent health. Heredity appears to play no part in causation. In 102 cases only ten knew of any relative who had polypi, one a mother (doubtful), three a sister, three a brother, one a father and two a grandfather. These cases are so few that one seems to be justified in considering them simply coincidences. Of 146 cases 76 were males and 70 females. These figures lend only a slight support to the statement, generally found in textbooks, that these growths are more common in males. More than half of the cases (78) were between thirty and fifty years of age. There were 29 between twenty and thirty, and the same number between fifty and sixty. The extremes were one at thirteen and one at seventy-eight. In 37 cases there existed a deformity of the septum, causing obstruction, more or less marked, of one nostril. Twenty-one of these are recorded as deviation, 11 as a ridge, and 5 as ridge and deviation. Small spurs and ridges and slight deviations were not considered. Bearing in mind the frequency of the occurrence of septal deformity without nasal polypi and *vice versa*, it seems very doubtful if the former ever stands in any causative relation to the latter. I should rather be inclined to the opinion (which, it seems to me, has some foundation in fact) that any injury to the nose which might result in a deformed septum might also bring about a condition favorable to the growth of polyps. This leads me to speak of the theory, expressed by Macdonald, that polypi begin with a localized inflammation of a mucous surface followed by the formation of edematous granulations, which later become covered with epithelium and form what we recognize as polypi. He states further that they may also begin by the accumulation of small round cells in the muco-periosteum, which gradually project from the surface until covered only by epithelium. It certainly seems most plausible to suppose that some cases of nasal polypi have their origin in granulation tissue. Such a theory would explain the fact just mentioned, which it seems to me has not been given the importance it deserves, that some of these cases trace their origin very directly to an injury to the nose. A neglected injury to the nose, with its attendant nasal obstruction, impairment of the circulation by pressure, and irritating muco-purulent or purulent discharge from the injured portion, might quite conceivably result in the formation of edematous granulations which would eventually develop into full-fledged polyps. Bosworth says

that a case has been reported by Gerdy, in which they occurred as a result of a fracture of the vomer. Downie reports a case of a large polyp in the left nostril of a woman aged seventy-four, which she considered the result of a blow on the head received in early life. Unfortunately, as I have said, the question of injury as a routine one was omitted from my records; nevertheless, I find that five of my cases traced the beginning of nasal obstruction to a blow on the nose. It seems to me that injury to the nose may be a factor in causation oftener than we have been accustomed to think, and that it might be profitable to question patients regularly on this point. This idea of the causative influence of previous injury is especially interesting in the light of the statements of Jonathan Wright regarding the blood supply of the mucosa. Any injury to the canals in which the arteries and veins lie would affect the veins more than the arteries and cause that edematous condition of the mucosa which may develop into polypi.

Another predisposing cause of the growth of nasal polypi is suppuration of one of the accessory sinuses. Again in this condition we undoubtedly have a similar disturbance of the "bony canals" of the blood supply. Macdonald says: "Generally speaking, when we have suppuration we find more or less development of granulation tissue, which tissue may be ultimately indistinguishable histologically from ordinary large polypi." While it is generally accepted that nasal polyps by obstructing the nose may lead to suppuration of one or more of the accessory sinuses, it is also true that a discharge of pus from a sinus may cause a growth of polypi or "edematous granulations histologically indistinguishable," which are not cured until suppuration ceases. Of 49 of my cases in which the purulent discharge was due to a sinus affection, in one the pus came apparently from the antrum only, in 11 from the ethmoid only, in 11 from the ethmoid and antrum and in 26 probably from the ethmoid. In this last group the patients were not seen sufficiently often to make an absolutely positive diagnosis. In those cases in which the discharge was the principal symptom and in which obstruction to breathing was little if at all noticeable, it is probable that the sinus trouble caused the polyps. I have records of several cases which support this view.

In these cases polypoid tissue rapidly disappeared after getting rid of a purulent discharge, leaving a healthy mucous membrane. But in those cases in which the nasal obstruction was the principal symptom, it was generally impossible to determine with any surety which was the underlying condition. In some it was no doubt the ethmoiditis; in others it was equally fair to assume that the ethmoid cells had become infected as a result of the presence of the polypi. In seven of my cases the polyps were bilateral while there was only a unilateral purulent discharge. In these cases the most logical conclusion is that the sinus disease resulted from infection of a nostril already occluded by polypi.

As to the theory of some writers that all nasal polyps owe their origin to ethmoid disease, I will only say one word. As long as many skilled and careful observers see cases in which, after the most painstaking scrutiny, they can find no evidence of ethmoid disease, and as long as there are other conditions which can just as reasonably be considered causes, it seems to me that the burden of proof lies with those who hold this view to show that ethmoiditis exists in these cases and to show us a satisfactory method of determining its existence.

All but about a fifth of the cases gave a history of frequent head colds. Some of these so-called colds were, no doubt, only symptoms of existing polypi. That frequent colds are a factor in other cases is quite probable. They indicate, among other things, an abnormal sensitiveness of the Schneiderian membrane. This membrane thus kept in a more or less constantly congested condition with increased serous transudation, one can readily see how the "water-soaked" condition, spoken of by Bosworth, might be acquired. It is undoubtedly a fact that a profound local vasomotor disturbance is present in a great many cases, and it is hard to conceive that such a disturbance does not stand in a causative relation to the polypi. Its existence is shown by the presence of sneezing and a watery discharge. Frequent sneezing and a watery discharge were noted in about one third of my cases, and asthma, which also shows the constitutional tendency to vasomotor instability, was present in one sixth of the cases. In the few cases, fifteen in number, in which the polyp is put down as single, the pedicle was small, and only a small area of the mucous membrane was affected.

SYMPTOMS.

In a very large proportion of cases, obstruction to respiration is the first symptom which calls the patent's attention to his nose. Sneezing, as I have already said, was marked in about a third of my cases. While often an early symptom, it was by no means always such, not appearing in some cases until considerable obstruction existed. Of 93 cases questioned as to the sense of smell, in 39 it was lost, in 4 much impaired, and in 27 impaired, leaving 27 in whom the sense of smell was presumably about normal. Undoubtedly if all these patients had been subjected to a practical test, it would have been found that the olfactory sense was lost or impaired in a still larger proportion of cases. Two or three of the patients in whom the polyps were unilateral stated that the sense of smell was wanting on the affected side. In many cases the smell does not return after the removal of the growths, due, as Bosworth puts it, to "a certain disorganization which occurs in the mucous membrane lining the olfactory region." The character of the discharge varies from watery to mucous, muco-purulent and purulent. Of 134 cases in which the character of the discharge was noted, in 39 it was watery, in 18 mucous, in 37 muco-purulent and in 32 purulent. In 8 cases the discharge, first noted as watery, became purulent later, owing to the starting up of an ethmoiditis.

SEQUELÆ.

Bronchitis was noted at present in 21 cases, in all probability as a direct result of the obstruction to nasal respiration. Asthma was associated with 10, asthma and bronchitis with 14 and hay-fever with 4 cases, while there were 2 cases of hay-fever

with asthma and 2 doubtful cases of hay-fever. I am inclined to think that it is extremely rare for a nasal polyp to take on a malignant character. No such case has ever come under my observation.

TREATMENT.

The aim of any treatment must be the complete removal of the polypi and the restoration of the mucous membrane to a healthy condition so that there will be no further growth. In the first place, it goes without saying that the growths should be removed with as little violence to the surrounding structures as possible. No one will dispute, I think, that the cold wire snare is to-day the instrument *par excellence* for their removal. This instrument must be supplemented in most cases by the use of cutting forceps of suitable shapes and sizes for reaching the parts affected. Where the polyp is single and growing from a small pedicle, a simple removal is often all that is necessary, and there may never be a recurrence. But in those cases in which the growths are numerous and diffuse, the middle turbinate will usually be found to be so deeply affected by the process that only its thorough removal will suffice to eradicate the disease. I have never used the galvano-cautery or chromic acid to destroy the base of these growths, because their irritating qualities, especially the galvano-cautery, may tend to excite that condition in the mucous membrane which we are trying to get rid of. It is unnecessary to speak of the possible dangers of using the cautery in the ethmoid region. I have thought that the application of 95% alcohol on pledgets of cotton to the site of the growths has been of assistance in preventing the recurrence of polypi in some cases. I often prescribe also the use of the distilled extract of hamamelis in a spray. Alcohol has been long ago recommended by McBride, Griffin, Cohen and others, and I simply wish to add my endorsement to its apparent value.

PROGNOSIS.

The prognosis is largely affected by the perseverance with which a patient returns for treatment as desired. I have already spoken of the difficulty one experiences in making patients follow up treatment. Eighty-three of my cases were under observation for a year or less, and the majority of them were seen only two or three times. And many cases which were under observation for a longer period did not return until again troubled by nasal obstruction. Twenty-five cases were seen at various intervals for more than one and less than five years, and 26 cases were seen in this way for five years or over. In these last two groups of cases no polyps were present one year after treatment in five cases. In 8 cases none were seen more than one and less than five years after the last treatment, and in 13 there were none five or more years after. In 7 cases there was a recurrence in one side but not in the other, one or more years after the last treatment. I have included in the above list three or four cases in which there were present at the last visit one or two minute polypoid excrescences in the region of the middle turbinate, but as these had remained unchanged without treatment for one to three or four years, I felt I was justified in including them among the cured cases.

The points which I wish to especially emphasize in closing are: (1) The question of a previous injury to the nose is to be considered in the etiology of polypi. (2) Probably only a small proportion of cases are caused by sinus disease (usually ethmoiditis). (3) A local vasomotor disturbance, which may be of constitutional origin, stands in a causative relation to polypi in a certain proportion of cases. (4) The removal of the whole middle turbinate will be found necessary in many cases where the growths are diffuse. (5) Many cases of nasal polypi can be cured if patients will return for treatment as instructed.

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Clinical Department.

SEPTIC ENDOCARDITIS.

BY A. W. DUDLEY, A.M., M.D., NORTH CAMBRIDGE, MASS.

A REPORT of the following case, which I believe was septic endocarditis, may be of interest. The patient, a girl of twenty-five, well developed and well nourished, though pale, has had albuminuria for three or four years — probably longer. Specific gravity, 1015–1020; albumin, ¼% to ½%. Sediment shows normal blood, some granular and hyaline casts. Otherwise her organs are normal. With care she leads a fairly comfortable life. For the winter of 1902 she was not as well as usual.

On Sunday, May 11, I was called to see her; temperature, 102°; pulse, 120, rising at night to 104° and 130; some soreness and redness of the throat (tonsilitis?). On Monday, Wednesday and Friday of that week, every other day, she had fever rising to 103° or 105°, while on Tuesday and Thursday she was very much improved. This suggested large doses of quinine, which had no effect on the temperature. The plasmodium malariæ was looked for in the blood and not found, and there was a marked leucocytosis (May 23, whites, 36,500).

Beginning in the early part of this week, there was a mixed macular, papular and hemorrhagic eruption mostly on the hands, forearms, feet and legs. This continued to appear in successive crops for two or three weeks, the chills coming so often that it was impossible to say whether or not they bore any relation to the rash. Later she had one large bulla on the left knuckle. This was clear at first but became milky; a culture proved sterile. In the middle of the first week also she had fleeting joint pains with some swelling of the legs. This did not last long, but whether or not because salicylates were used I cannot say.

The urine at this time became very high colored; blood, granular and epithelial casts appeared in abundance; albumin remained about constant.

The condition of the urine, however, seemed to be secondary to the fever, and not the cause of it.

At the end of the first week she was seen by Dr. E. H. Stevens. Malaria could not be excluded, and quinine in large doses was continued. Malignant endocarditis was spoken of. Heart negative. During the second week the fever waves became more frequent, at least one a day, rising at times to 106°. The pulse followed the temperature. The heart showed a slight systolic souffle when in violent action only. Spleen slightly enlarged. During the subsidence of the fever she was bright, gay and felt well. The paroxysm of fever was sometimes preceded by chill, vomiting or restlessness, though generally she was quiet till the temperature reached about 103°, when she became restless, and I began early to give her morphia with quieting effect.

This brings the story up to the end of the second week, when she was seen by Dr. F. C. Shattuck. Malaria at this time could be ruled out. Trichinosis was spoken of to be dismissed (eosinophiles not increased). Pyemia was diagnosed, but the source of the infection was not found. Septic endocarditis seemed possible. Dr. Shattuck found the heart and spleen normal, and did not think the eruption then present due to miliary emboli. He advised a blood culture, and the use of antistreptococcus serum (Parke, Davis & Co., 20 cc. daily) if streptococci were demonstrated, or no organism was found. A blood culture proved negative. The serum was given 210 cc. in nine days, and as no benefit was apparent its use was discontinued.

Beginning with May 22 a three-hourly chart was kept. Up to June 10 (three weeks) the pulse followed the temperature. The interval between the crests of the fever waves varied from twelve to twenty-four hours, with one exception (forty-two hours), and the crest of the wave rose from normal to 105° as the lowest and $106\frac{8}{10}$° as the highest. Physical signs showed nothing new except that on June 9 an extra strong cardiac contraction, every 6 to 33 beats, followed by a slightly prolonged pause, was noted. This was never observed again. The systolic souffle, though still faint, became more distinct, was confined to the apex, not transmitted, and heard only when the heart was in violent action. There were a few short attacks of precordial pain.

June 10 we began using unguentum credé, about 2 drams daily. The afebrile intervals immediately began to grow longer and the fever to diminish. I must say, however, that I think this was accidental and not cause and effect, as a backward study of the chart shows slight indications of such a change before unguentum credé was used at all.

From June 10 to July 12 there were fourteen rises of temperature with intervals of from twelve hours to five days — generally two or three days. The pulse was more affected by the attack, and less regular in the intervals; the systolic souffle became more distinct at the end of that time. The depression between attacks was often severe, though never immediately alarming. Unguentum credé was continued. She seemed to be depending on morphia, for which I could find no substitute.

From July 12 to 28, though often greatly depressed and somewhat exhausted, there was no fever except for two days, and then not above 101°. July 20 and 21 she had two attacks of delirium, lasting one and two hours respectively, pupils normal and reacting to light. July 28 and 30 she had fever rising to 105° each time. This was the last till August 25, when with sore throat and diarrhea the temperature rose to 104°.

Her convalescence worried me for a time, among other reasons because I could not entirely omit the morphia, but this was finally accomplished. Her urine is much as it was before the attack. There is no demonstrable lesion of the heart. She has been better this winter than last. She has had, however, what she has never had before, "rheumatism" of the legs, especially on first starting after a rest. Salicylates do no good.

The treatment, aside from what I have mentioned, was entirely symptomatic: alcohol, strychnia, at times digitalis, morphia, good food. Coffee was craved and allowed freely.

As I said in the beginning I believe this was one of the rare cases of septic or malignant endocarditis which get well — more rare because not grafted on to an old endocarditis. I am aware that this diagnosis cannot be absolute, and is arrived at by exclusion fully as much as by positive signs; and while the cardiac signs were not conclusive, autopsies show that frequently physical signs do not betray even very abundant vegetations.

The association between tonsilitis and rheumatism, and rheumatism and endocarditis is recalled by this case starting with a sore throat, showing rheumatic symptoms after a few days and coincident therewith the septic fever curve.

Besides those mentioned I am indebted to Drs. C. M. Hutchinson and H. G. Lazelle for assistance in this case.

Important points are noted on the chart. The chart for the first ten days is not published.

Medical Progress.

PROGRESS IN PHARMACOLOGY AND PHYSIOLOGICAL CHEMISTRY.

BY M. VEJUX-TYRODE, M.D., BOSTON,

Instructor in Pharmacology in Harvard University.

IT has been repeatedly shown that the various organs contain some substance or substances which are capable of digesting them — autolysis. These observations are of very great importance, because by the study of such processes we may get a closer insight into normal and pathological metabolism.

Martin Jacoby [1] notes specific properties to the autolytic action in different organs. He makes the interesting observation that the products of autolysis in different organs are quite different. In the products of autolysis of the lungs he finds a great deal of albumoses, while in autolysis of the liver he finds practically no albumoses. If the product of autolysis of the lung containing a great deal of albumose is treated with extracts of liver, practically all the albumoses disappear. He concludes, therefore, that autolysis is carried on by very different ferments in different organs.

[1] Beitr. z. Chem. Physiol. u. Path., No. 3.

Alfred Reh[2] found as products of autolysis of ox lymph gland, thymin, leucin, tyrosin and ammonia.

O. Shumm[3] found as products of autolysis of the spleen at first much albumose, which later disappeared and were replaced by lysin, ammonia, leucin and tyrosin.

Fritz Baum[4] worked up the constitution of a new aromatic body from pancreatic auto-digestion called skatosin.

Leo Langstein[5] proved the undoubted presence of albumose in the blood.

Waldemar Stade[6] confirms Volhard's observation concerning the presence of a fat splitting ferment in the stomach, and even recommends a further study with a view of determining the efficacy of the stomach by a quantitative determination of this ferment.

N. Sieber[7] found that oxidizing substances, such as hydrogen peroxide and calcium peroxide as well as plant and animal oxidases, as horse fibrin, destroy the efficacy of toxins not only in vitro but in living organisms.

Erich Harmark[8] found that uranium, mercury and copper are much more toxic to the young salamander than iron; also that arsenic has a relatively very low toxicity.

R. Magnus[9] showed that ammonia gas was never absorbed by the lungs and that it was not excreted by these organs even when injected in large quantities into the pulmonary arteries.

E. C. van Leersum[10] demonstrated that equimolecular solutions of sodium sulphate, sodium nitrate and sodium acetate have the same reviving influence as normal salt solution after fatal hemorrhage.

Hildreth[11] recommended preparations of apocynum cannabinum as superior to digitalis in cases of a dropsical effusion, because they do not cause the cumulative action and the other untoward effects of digitalis.

Tunnicliffe[12] finds phenolphtalein a very efficacious purgative in the dose of 0.1 to 0.25 gm.

Hirsch and Beck[13] made determinations of the viscosity of the blood in Bright's disease, and found but rarely an increased, usually a decreased or normal one. They concluded therefore that the hypertrophy of the heart accompanying these cases cannot be explained by increased resistance due to increased viscosity.

Fritz Rosenfeld[14] found an increase in the volatile fatty acids in the urine in case of gastric ulcers, with hyperacidity or normal acidity also in cases of carcinoma of the stomach with sub- or anacidity. He found a decrease in cases of retention with subacidity.

Mathes[15] discovered a true proteolytic ferment in the urines of dogs with extirpated stomachs. Like pepsin, it digests proteid in acid solutions.

[2] Ibid.
[3] Ibid.
[4] Ibid.
[5] Ibid.
[6] Ibid.
[7] Arch. des Sc. Biol. de St. Peterab., 9.
[8] Arch. f. Exp. Path. u. Pharm., 48.
[9] Ibid.
[10] Ibid.
[11] N. Y. Med. News, 1902.
[12] Brit. Med. Journ., 1901.
[13] Deutsch. Arch. f. klin. Med., No. 12.
[14] Deutsch. Med. Woch., No. 13.
[15] Arch. f. Exp. Path. u. Pharm., No. 49.

Zoepffel[16] agrees that the anesthetics containing halogens are as a rule more depressent to the heart than others, but he believes that the degree of depression is not exactly proportional to the amount of halogen in a compound.

K. Wittmack[17] believes that quinine affects the ear not by producing congestion, as was formerly thought, but by producing an ischemia exactly as in the eye.

Otto Cohnheim and Franz Soetbeer[18] experimented on young dogs with a modification of Pawlow's method to see whether young animals have gastric juice, and if so, whether it is also produced by some reflex action analogous to the reflex action in adults. They found that sucking in itself produced a secretion of gastric juice.

Joh. Kropil[19] uses mesotan (methoxy methylester of salicylic acid) in a solution of olive oil. He rubs it into the skin, especially over rheumatic points. He claims that this form of treatment gives the good effect of salicylates without their undesirable ones.

Bromipin, a compound of bromine with sesame oil, was given by A. Rahn in clysters or in milk or tea with good results.

Kullman[21] made observations on prisoners to see if the food of prisons has any influence on the secretion of the gastric juice, and found that hydrochloric acid is always diminished or absent in 47% of the cases. This is not due to the psychical condition, but mainly to gastritis.

F. Soetbeer and Ibrahim[22] found that after ingestion of water the urine purin bases are not increased, but the nitrogen in the feces is increased.

A. Rydygier[23] studied the functions of the kidneys by cryoscopy under chloroform anesthesia, and found no influence on normal kidney but much disturbances when the kidney was diseased; he therefore regards kidney disease as a contraindication to the use of chloroform.

R. Traussig[24] observed over 50% decrease in the blood pressure after the administration of iodipin, and ascribed this result to a dilatation of the splanchnic blood vessel. He therefore recommends it in lead colic.

C. L. Klotz[25] and Mangel[26] both injected collargol into the circulation of patients with septic endocarditis, and obtained no undesirable results. Klotz obtained marked beneficial effects in his case.

J. Danysz[27] showed that radium produces destruction of the epidermis and cutis when brought in contact with the skin of a guinea pig. It produces tetanic convulsion when brought in contact with the spinal cord.

R. Lepine[28] found that if dog's blood to which sugar has been added stands at a temperature of 38° C. with a current of oxygen passing through it, 30% of the sugar disappears in one hour.

[16] Ibid.
[17] Pflüger's Arch., 95.
[18] Hoppe Seyler's Zeitschr., 37.
[19] Wien. Med. Presse, No. 13, 1903.
[20] Ibid.
[21] Viertel Jahrschr. f. gerichtl. Med., 23, S., 314.
[22] Zeitschr. f. Physiol. Chem., 36.
[23] Medycyna, No. 37.
[24] Wien. med. Woch.
[25] Deutsch Med.Woch. No. 29.
[26] N. Y. Med. Journ., Dec. 12.
[27] C. r. d. l'Acad. des Sc., 136.
[28] Ibid.

Blood of asphyxiated animals, venous blood or blood of an animal having received a subcutaneous injection of adrenalin all fail to show this glycolysis.

J. Justus,[29] by a very sensitive method, was able to demonstrate iodine in the thyroid, thymus, lymph glands, kidneys, spleen, suprarenals and testicles.

J. Haberman[30] confirmed the observations of Vogel and Kissling by finding hydrocyanic acid in tobacco smoke. He found from one-three-hundredths to one-one-hundredth as much as nicotine, a quantity which is insignificant compared with nicotine as far as action is concerned. Since he could obtain no trace of hydrocyanic acid by wet distillation of tobacco, it is very probable that this found in smoke was formed by burning.

Inouyer and Saiki[31] found an excess of lactic acid in the urine after epileptic attacks, which they attributed to insufficient supply of oxygen during the attack and not to disturbance of the liver.

A. M. Luzzato,[32] while studying the physiology of oxalic and oxaluric acids, found that the excretion of oxalic acid is increased by the injection of uric acid, and that oxaluric acid is completely transformed to oxalic acid in the living organism.

Fr. Hupfer[33] found that quinic acid exerted no influence upon the excretion of uric acid and therefore advises against the use in gout of such quinic acid preparations as urosin sidonal, urol, chinatropin, ursal, urapherin, uropheninbenzoate and urotropine salicylate.

E. Schülz and N. Castro[34] studied the hemicellulose, which forms the cell walls of the seed and cotelydon of lupinus lutus. They find this substance susceptible to partial digestion by diastase, taka-diastase, ptyalin and pancreatin. They believe that this substance is dissolved in the plant cells by a ferment action and subsequently used for the nutrition of the plant.

Aristido Kanitz[35] obtained maximum trypsic digestion in the presence of the hydrates of barium, calcium and strontium in about the same ionic concentration. He therefore concludes that the influence of the hydrates in digestion is dependent on the concentration of the hydroxylions.

Ernst Darmstaedter[36] describes a new method for the quantitative estimation of oxybutyric acid based on its transformation to crotonic acid by 50% sulphuric acid. The results which he obtained are very good, and if confirmed by others the method will be valuable, since no good methods existed before. The best, that of Magnus-Levi, was very far from accurate and tedious in carrying out.

Friedrich Kruger[37] found changes in the absorption bands of hemoglobin after treating it with chloroform. He concludes that chloroform does not only precipitate hemoglobin mechanically but also changes it chemically.

Gustav Embdem and Franz Knoop[38] could not find during the absorption a transformation of albumoses to coagulable proteids or to crystallizable substances, as respectively Hofmeister and Cohnstein, but he finds that albumose is absorbed as such and is present in the blood.

Friedel Pick[39] experimented with extracts of liver, kidneys and blood in reference to their diastatic properties. He finds, as others, that the liver does not alone possess this property, but that the kidney does possess it even in a higher degree. He finds that the diastatic ferment in the liver is destroyed by cooling and its activity is decreased by quinine and hydrocyanic acid in great enough concentration.

B. Friedman[40] finds that creosotal rapidly decreases fever and dullness in pneumonia, and he concludes that this agent acts as an antiseptic to kill or retard the growth of the bacteria causing pneumonia.

[29] Virchow's Arch., 170.
[30] Zeitschr. f. Physiol. Chem., 37.
[31] Ibid.
[32] Ibid.
[33] Ibid.
[34] Ibid.
[35] Ibid.
[36] Ibid.
[37] Beitr. z. Chem. Physiol. u. Path., 3.
[38] Zeitschr. f. Physiol. Chem., 37.
[39] Beitr. f. Chem. Physiol. u. Path., 3.
[40] Deutsch. med. Woch., No. 14.

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

TWENTY-FOURTH ANNUAL MEETING, WASHINGTON, D.C.

The President, DR. MAURICE H. RICHARDSON in the chair.

SECOND DAY, MAY 13, 1903.

PROF. JOH. v. MIKULICZ-RADECKI, Breslau, Germany, read a paper entitled

SOME CONTRIBUTIONS TO THE SURGERY OF THE GASTRO-INTESTINAL TRACT,

in which he divided the subject into the following topics: (1) Cardiospasm and its treatment; (2) peptic ulcer of the jejunum; (3) the operative treatment of severe forms of invagination of the intestine; (4) operation on malignant growths of the large intestine, and discussed each one at some length.[1]

MR. B. G. A. MOYNIHAN, Leeds, England, read a paper on

THE SURGERY OF THE SIMPLE DISEASES OF THE STOMACH,

in which he stated that the great majority of such cases susceptible of successful treatment by surgical measures are due to ulceration or to its complications and results. These conditions were considered by the author under the following heads:

(1) Perforation of gastric or duodenal ulcers.
(2) Hemorrhage from gastric or duodenal ulcers.
(3) Chronic ulcer; its various clinical types.
(4) Hour-glass stomach.

After dealing at considerable length with the symptomatology and treatment of these conditions, and laying especially stress upon the necessity for individualizing the cases, he gave the following résumé of the cases upon which his paper was based[2]: Perforating gastric or duodenal ulcer, 12 cases, 6 recoveries; gastro-enterostomy for chronic ulcer, etc., 70 cases, 1 death; pyloroplasty, 3 cases, 0 deaths; hour-glass stomach, 15 cases, 3

[1] See JOURNAL, cxlviii, p. 608.
[2] See JOURNAL, cxlviii, p. 611.

deaths; gastroplication, 1 case, recovered; excision of ulcer for hematemesis, 1 case, died.

These two papers were discussed by DRS. W. W. KEEN, Philadelphia; W. J. MAYO, Rochester, Minn.; WM. L. RODMAN, Philadelphia; LEONARD FREEMAN, Denver; J. M. T. FINNEY, Baltimore; L. NcLANE TIFFANY, Baltimore; N. B. CARSON, St. Louis; and B. FARQUHAR CURTIS of New York; PROFESSOR TIEMANN of Leipsic, and closed by PROFESSORS MIKULICZ and MOYNIHAN.

PAPERS ON THE THERAPEUTIC VALUE OF THE X-RAYS IN SURGERY.

DR. ARTHUR DEAN BEVAN of Chicago read a paper entitled

THE THERAPEUTIC VALUE OF THE X-RAY.

DRS. WM. L. RODMAN and G. E. PFAHLER read a paper entitled

THE VALUE OF THE X-RAY IN SUPERFICIAL EPITHELIOMATA AND TUBERCULOSIS,

quoting the following advantages of the treatment as given by Pusey:

(1) It is painless; (2) it destroys diseased tissue but leaves healthy tissue in its place; (3) it leaves a minimum scar; (4) it can be used when the surrounding tissue cannot be sacrificed; (5) it relieves pain and induces sleep.

The paper was closed with the following conclusions:

(1) The length of time required for the cure of epitheliomata is longer than by surgical or caustic treatment, while the cosmetic results are better. The dangers are proportionate to the urgency of the treatment as indicated by the degree of malignancy. It should only be recommended in cases that are inoperable either because of the extent of the growth or its location.

(2) It is probably the best means at our command for the treatment of superficial tuberculosis, and gives better cosmetic results.

(3) It should follow all operations for malignant disease or tuberculosis with the twofold object of stimulating the healing process and of preventing a recurrence. In some cases it may be of an advantage to give a short course of treatment before operation, to destroy the outlying portions of the growth and make such operation of a less formidable nature.

DR. WILLIAM B. COLEY, New York, read a paper entitled

FURTHER OBSERVATIONS ON THE INFLUENCE OF THE ROENTGEN RAY UPON SARCOMA,

in which he stated that from Feb. 1, 1902, to May 11, 1903, he had treated at the General Memorial Hospital 36 cases of inoperable sarcoma, the pathological classification of which was as follows: Round-celled, 21 cases; spindle-celled, 6 cases; mixed-celled, 2 cases; melanotic sarcoma, 1 case; osteosarcoma, round-celled, 1 case; type of cell doubtful, 5 cases.

He stated that in four cases which he had reported to the society last year the tumors had entirely disappeared, but in every case there has since been a recurrence. He then gave a brief history of the physical condition and treatment of several cases, and expressed the opinion that the x-ray has a much more powerful effect upon sarcoma than carcinoma.

In regard to the relative merits of the toxins and x-rays in inoperable sarcoma, he felt that the time had been too short and experience too limited thus far to definitely decide this question. He had noted, however, in several cases of inoperable round-celled sarcoma, in which the toxins had been tried and failed, the x-ray had caused entire disappearance of the tumors, but there had been a speedy recurrence in every case. On the other hand, in a much larger number of cases of inoperable sarcoma the tumors have entirely disappeared under the toxin treatment, and remained well from three to ten years after the treatment. The dangers from this method of treatment are burns, toxemia, and metastases resulting from the cells being broken down and carried to other parts of the body. He did not believe that the x-ray method should be employed in operable cases of sarcoma, with the possible exception of carcinoma of the extremities, in which operation would necessitate amputation. In such cases he recommended a brief course of the combined x-ray and toxin treatment, reporting a case of sarcoma of the fibula, which had been treated by this method, which had been treated six years ago by the toxin method, and has remained perfectly well ever since.

DR. ALEX. B. JOHNSON, New York, read a paper entitled

SOME EXPERIENCES IN THE TREATMENT OF INOPERABLE MALIGNANT GROWTHS BY THE X-RAYS,

in which he reported 10 cases, 9 of carcinoma and 1 of sarcoma, 8 died under treatment, and 2 are still alive and have apparently improved, one of them being the case of sarcoma. After a considerable time severe dermatitis was produced in each of these cases, and it was advised the treatment be discontinued at intervals for at least six months. The source of the current was 110 volts direct commercial current. Fifteen-inch spark length Willyoung induction coil. The distance was at first twelve inches, which was gradually diminished to six, as tolerance at that distance became evident on the part of the patient. The surrounding parts were protected by sheets of lead foil weighing 10 oz. per square foot.

These papers were discussed by DRS. WILLIAMS of Boston, W. JOSEPH HEARN of Philadelphia and R. H. HARTE of Philadelphia, and closed by the authors.

DR. WILLIAM B. COLEY, New York, read a paper entitled

RESULTS OF ONE THOUSAND OPERATIONS FOR THE RADICAL CURE OF INGUINAL AND FEMORAL HERNIA PERFORMED BETWEEN 1891 AND 1902.

Out of the 1,003 cases which the author had operated upon between August, 1891, and December, 1902, there were 937 cases of inguinal hernia, 756 of which occurred in males and 181 in females; and 66 cases of femoral hernia, all males. In the 66 cases of femoral hernia there was no mortality and the primary union was obtained in all but one

case, which formed the only recurrence, the balance having remained well from six months to eleven years. The Bassini method for femoral hernia was employed in 16 cases and the purse-string suture (with kangaroo tendon) in 50 cases. Out of the 181 operations upon the female for inguinal hernia there was no recurrence and no relapse, the method employed being practically Bassini's method for the male. There were no deaths in any of these 1,003 cases. In children operations should seldom be advised under four years, the reason being that many of the cases at this age are cured by a truss, but after that age in cases in which a truss has been tried and failed, or cases in which the presence of reducible hydrocele prevents a truss from holding the rupture, operation is advised. In all adult cases under the age of fifty years operation is advised unless there are strong contraindications. Between the ages of fifty and seventy years operation is advised in patients in good health in cases in which the rupture is held with difficulty by a truss. Six hundred and fifty of these cases were found well in from one to eleven years; 708 cases were found well in from six months to eleven years; and 467 in from two years to eleven years. A careful résumé of the literature on the subject and a comparison of the results obtained by other operators were given.

This paper was discussed by DR. A. H. FERGUSON of Chicago and closed by the author.

DR. N. P. DANDRIDGE, Cincinnati, Ohio, read a paper entitled

REPORT OF A CASE OF GANGRENE OF FIFTEEN INCHES OF CECUM AND ILEUM AFTER AN OPERATION FOR APPENDICITIS. RELIEF OF ARTIFICIAL ANUS AFTER REPEATED OPERATIONS.

On opening the abdominal cavity for the purpose of removing the appendix it was impossible to locate it, but there was discovered a mass on the inner side of the colon, above the ileo-cecal valve, beneath the peritoneum and lying on the psoas muscle and overlapping its inner edge. The tumor was removed after ligating an artery which ran through it, and subsequent examination proved it to be enlarged mesenteric glands. This, together with the appendix, which was found behind the cecum, was removed, and the wound closed without drainage, after which the patient progressed well until the evening of the eighth day, when the dressings suddenly became saturated with a thin fecal fluid, and were changed, and the same condition was found again the next morning, and on opening the wound gangrenous tissue was exposed, which increased in extent until a day or two later a section of the ileum nine inches long was washed out, entirely gangrenous. A complete artificial anus was established, a drainage tube inserted, and with this drainage the pus and fever disappeared. At the end of seven weeks a lateral anastomosis between the small intestine and colon was done, in order to partially relieve the artificial anus, but proved to be a complete failure so far as this was concerned. Some months later an end-to-end anastomosis of the ileum and colon was made by the Murphy button, a small fecal fistula remaining in the side. Two attempts were made to close this fistula, and a colostomy had added much to the patient's comfort and diminished still more the size of the opening, which was finally closed by means of pressure from an elastic sponge held in place by an elastic bandage around the body.

This paper was discussed by DRS. A. J. OCHSNER of Chicago and G. R. FOWLER of Brooklyn, N. Y., and closed by the author.

THIRD DAY — MORNING SESSION.

DR. JOHN C. MUNRO, Boston, Mass., read a paper entitled

THE SIGNIFICANCE OF ALBUMIN AND CASTS IN SURGICAL PATIENTS,

in which he stated that, while he believed that there was no doubt that there was danger in operating on a patient whose kidneys are incapable of sufficient elimination, and where there are secondary organic changes, because a patient exhibits a small amount of albumin, hyaline and fine granular casts, with renal cells, the conclusion should not be hastily reached that he is not a fit subject for operation; on the other hand, the presence of any of these symptoms should be sufficient to cause a thorough investigation. He reported a series of 500 cases showing albumin and casts in the urine, not including those, however, that showed renal degeneration, glycosuria, genito-urinary diseases, burns, erysipelas or similar diseases, most of which were subjected to ether anesthesia, and in none of them was it noticed that any renal damage was inflicted. Out of the series of 500 cases 63 died: 8 from shock, 2 after operation for general peritonitis, 5 from pneumonia, 3 from tuberculosis, 19 from sepsis or severe peritonitis, 4 from senility, and, in addition, there were deaths from embolism, malignant disease, cardiac disease, skull fractures and pancreatitis, where the rôle of the urinary organs must have been insignificant. Of the four cases in which death was ascribed to senility, one with cellulitis of the arm had ¼ % of albumin and casts; one with intestinal cancer had profuse diarrhea, one had a strangulated hernia and the fourth died one month after fracture of the femur, showing only the slightest possible trace of albumin with hyaline and granular casts.

This paper was discussed by DRS. JOHN B. ROBERTS of Philadelphia, N. B. CARSON of St. Louis, F. H. GERRISH of Portland, Me., and M. L. HARRIS of Chicago, and closed by the author.

DR. FRANCIS J. SHEPHERD, Montreal, Canada, read a paper entitled

THE TREATMENT OF ANEURISM OF THE EXTERNAL ILIAC ARTERY BY DIGITAL COMPRESSION, WITH REPORT OF A CASE,

in which he referred to the great dangers of surgical interference with the tumor, making amputation of the extremity preferable in many cases to trying to remove the aneurism. He gave a careful résumé of the literature on the subject. The advantages of digital compression are that no apparatus is necessary, the finger being the sole means by which the artery is controlled above the aneurism.

This, of course, requires quite a number of assistants, and does not usually require to be kept up more than twenty-four hours; in the case reported, the pulsation ceased at the end of twelve hours.

This case occurred in a man forty-three years of age, who had strained himself by lifting a heavy weight, and some months afterward a swelling appeared in the left groin, which pulsated; was at first soft and painless, but gradually became harder and seemed to grow upwards into the abdomen. The patient objected to operation, and it was decided to put him on palliative treatment until the session opened, so that relays of students could be secured. He was put on Tuffnell's treatment and ice-bags applied over the tumor, iodide of potassium being given internally, and very little fluid. At the end of twelve hours pulsation had entirely ceased, the pain having been severe after the first four or five hours until the end of twelve hours, being controlled by hypodermic injections of morphine. After twelve hours the patient had no excessive pain, but compression was continued in a moderate degree for twelve hours more, when the leg was wrapped in cotton wool and carefully bandaged, he being kept in bed for a couple of weeks more, and six months after the operation, although the tumor could be easily felt, there was no pulsation and it was very hard.

This paper was discussed by DRS. R. H. HARTE, of Philadelphia, J. F. BINNIE, of Kansas City, Mo., and JAMES T. BRYANT, of New York, and closed by the author.

DR. LEONARD FREEMAN, Denver, Col., read a paper entitled

STRANGULATED LEFT DUODENAL HERNIA, IN WHICH THE SAC CONTAINED THE ENTIRE SMALL INTESTINE, THE CECUM AND A PORTION OF THE COLON,

in which he referred to the fact that the abdominal viscera and peritoneum are subject to various malformations and malpositions, sometimes acquired and often congenital, and unless the surgeon be familiar with these unusual phenomena his diagnostic ability will be curtailed by confusing conditions for which he can find no adequate explanation. The peritoneal fossæ may be responsible for the most remarkable forms of hernia, and this is especially true of the duodenal fossæ. He carefully reviewed the anatomical formation in this region, and reported a case of strangulated left duodenal hernia in a strong, well-devoloped man, thirty-nine years of age. He had always enjoyed good health with the exception of occasional indefinite abdominal pains, and five days before the author saw him he developed a severe ileus, with the usual symptoms of acute intestinal obstruction, with a pulse of 120; temperature subnormal and capillary circulation poor. Immediate operation was performed. On opening the abdomen the cavity was found to be occupied by an immense tympanitic tumor, resembling an ovarian cyst, which could be outlined on each side by passing the hand between it and the abdominal walls. Upon opening the membranous sac it was found to contain the entire small intestine, together with the cecum and some six or eight inches of the colon. There was considerable foul and bloody serous fluid, no traces of which existed outside the sac, showing how completely the inner cavity was separated from the outer. The cecum, which was distended with fluid feces to the size of an infant's head and largely gangrenous, lay in the left upper quadrant of the abdomen, just beneath the spleen, in the vicinity of which the swollen appendix was attached by recent inflammatory adhesions.

In attempting to relieve the condition it was necessary to resect the gangrenous cecum together with some six inches of the large intestine and a considerable portion of the small bowel. In doing this the gut was crushed with an angiotribe, the cut ends invaginated, and the opening closed with an over-and-over suture. A side-to-side anastomosis was then made with the Murphy button between the lower end of the ileum and a loop of the colon in the right iliac fossa; but the patient's resisting powers were so poor and the operation so complicated that death resulted.

This paper was discussed by DR. JOSEPH G. BLOODGOOD of Baltimore, and DR. ELLSWORTH ELIOT of New York, and closed by the author.

DR. B. FARQUHAR CURTIS, New York, read a paper entitled

THYROIDECTOMY AND SYMPATHECTOMY FOR EXOPHTHALMIC GOITER,

in which he referred to the fact that the surgical treatment of this condition has excited much interest of late, owing to the fact that medical treatment failed in many cases, although he believed if the disease had not progressed too far and the patient's circumstances were such as to permit systematic treatment for a sufficient length of time, rest, hygienic measures and proper medication would generally produce a cure, or at least hold the symptoms in check, but there are many cases amenable to surgical treatment that cannot be cured by medicine. However, this treatment is not unattended by dangers, especially acute exacerbations of the symptoms known as thyroidism, which is just as liable, however, to be produced by operation in any other part of the body.

The various operative measures which have found favor are: (1) Thyroidectomy of one half of the gland. Resection of a smaller portion and enucleation of the situs of the tumor appear to be much more dangerous in these cases on account of the greater danger of hemorrhage (Kocher). (2) Ligation of the arteries. (3) Erythyreopexy. (4) Sympathectomy or partial or total excision of the cervical ganglia.

In conclusion he stated that exophthalmic goiter could be cured by both thyroidectomy and sympathectomy, a perfect result being secured in about 60 % of the cases of thyroidectomy, and an immediately good result appears to be the rule in sympathectomy. Sufficient time has not elapsed to judge of the permanence of the cure, but the immediate results are far superior to those of thyroidectomy. The relative mortality of the two would seem to favor sympathectomy (Kocher 4 deaths in 59 cases of thyroidectomy and ligation only; Jonnesco no deaths in 14 cases of bilateral sympathectomy), although in my own cases the result is the opposite. He believed that local anesthesia should be employed, and sympathectomy should be performed only on one side at a time, a sufficient time being allowed to elapse for the patient to recover from the effects of the first operation.

This paper was discussed by DRS. THOMAS W. HUNTINGTON of San Francisco, WILLY MEYER of

New York, BACON, of New Haven, A. J. OCHSNER, of Chicago, GEORGE WOOLSEY, of New York, EMMET RIXFORD, of San Francisco, F. J. SHEPHERD of Montreal, Canada, and JOSEPH C. BLOODGOOD, of Baltimore, and closed by the author.

DR. WILLY MEYER, New York, read a paper entitled

PROSTATECTOMY AND GALVANO-CAUSTIC PROSTATOTOMY (BOTTINI'S OPERATION); THEIR PRESENT STATUS IN THE RADICAL TREATMENT OF THE HYPERTROPHIED PROSTATE GLAND,

which he summed up as follows:

(1) The operations making a direct attack upon the enlarged prostate gland are preferable to those aiming to exert an indirect influence.

(2) We have two useful operative procedures for the direct treatment of the enlarged prostate, that is, prostatectomy and galvano-caustic prostatotomy (Bottini's operation).

(3) In selecting the method indicated in the given case we must individualize and be guided by anatomic, pathologic and social conditions.

(4) Prostatectomy is, of course, the most radical and most surgical procedure; it should be the operation of choice whenever promising success.

(5) Perineal prostatectomy offers advantages over the suprapubic method, since it enables the operator to do the operation under the direct guidance of his eyes.

(6) Debilitated patients who seem unfit subjects for the more radical operation should not be relegated to catheter life, nor should prostatectomy be performed in order "to let them down easy"; they should be advised to have Bottini's operation done.

(7) Surgeons should familiarize themselves with both methods in order to be in a position to do justice to their patients.

(8) It is the duty of those refusing to do Bottini's operation under any circumstances to nevertheless advise patients who ask for more radical relief to have Bottini's operation done, if the operation with the knife seems contraindicated.

(9) Further carefully compiled statistics as to the late results of both operative procedures, preferably in the hands of one man, are desirable in that they will increase our knowledge with reference to the proper selection of the proper method in the individual case.

This paper was discussed by DRS. LEONARD FREEMAN of Denver and A. H. FERGUSON of Chicago, and closed by the author.

DR. CHARLES A. POWERS of Denver reported a case of

DIFFUSE GONOCOCCUS INFECTION OF THE ENTIRE UPPER EXTREMITY.

His patient was a man of twenty-eight years who developed a very extensive phlegmon in the neighborhood of the right elbow joint with concomitant swelling and edema of the entire limb from the pectoral region and shoulder to the ends of the fingers. The gonococcus was recovered from pus liberated by early free incisions, and was also found in a thin serous fluid which escaped at the site of other openings. The course was protracted over many weeks, the patient recovering with stiffened joints.

The author emphasized the fact that systemic gonorrheal infection may invade the tissues in wide variety, the gonococcus having been found in the peritoneum, the pleura, the pericardium, myocardium, endocardium, meninges of the brain and spinal cord, periosteum, perichondrium, muscles and tendon sheaths, bursæ, fascia, the skin, the parotid gland, the kidney and the blood current, as well as the joints.

DR. J. F. BINNIE, Kansas City, Mo., read a paper entitled

MYOSITIS OSSIFICANS TRAUMATICA,

in which he called attention to the fact that bone may be formed in muscle or tendons under several distinct conditions: There may be a process of ossification attacking one muscle after another, myositis ossificans progressiva, producing the ossified man of the freak shows. Oftentimes repeated slight traumata give rise to bone growths in muscle or tendon, examples of such growths being "riders' bone," "drill bone," "cavalryman's bone," and "fencers' bone"; and lastly there is the so-called myositis ossificans traumatica, where a mass of bone forms in a muscle after a single injury, which was the condition with which the paper dealt. The author reported a case occurring in a man aged forty-one, who had received a severe blow on the right forearm two weeks previously while boxing. One week later the tumor was removed and eight months thereafter there had been no recurrence and no disability. The paper dealt fully with the literature on the subject and the various theories of the origin of these tumors.

DR. J. C. BLOODGOOD, Baltimore, Md., read a paper entitled

METHOD OF INSTRUCTION IN SURGICAL PATHOLOGY,

in which he referred to the fact that clinical instruction in the hospital wards and in the outpatient departments always has certain defects and limitations as a complete method of instruction, as he felt that during the time the student spends in the wards, many important surgical diseases had not been seen at all, or so rarely that the student did not get a clear conception of the disease, and in addition it is very difficult for the student to follow the patient throughout the progress of the disease and his after-condition. In the Johns Hopkins Hospital the instruction of the third year medical class in the surgical laboratory is divided into two parts: first, the systematic part, in which the instruction is given by pamphlets, museum specimens, microscopic sections and illustrations; and second, the more difficult or routine instruction, which is limited to the fresh material sent to the laboratory from the operating and autopsy rooms. He then described each of these parts in detail.

(*To be continued.*)

Recent Literature.

Atlas and Epitome of Diseases of the Mouth, Pharynx and Nose. By DR. L. GRUNWALD, of Munich. Second edition, revised and enlarged. Authorized translation from the German. Edited

with additions by JAMES E. NEWCOMB, M.D., Instructor in Laryngology, Cornell University Medical College, etc. With 102 illustrations on 42 lithographic plates, and 41 figures in the text. Philadelphia and London: W. B. Saunders & Co. 1903.

This is a companion volume to the one on the larnyx, edited by Dr. C. P. Grayson' and published in 1898. The two books combined offer one of the most attractive manuals on the diseases of the upper respiratory tract. This is especially true for the instructor, who can use the excellent plates to the best advantage in place of, or in addition to, his clinical teaching. Stated briefly, this book is about equally divided between lithographic colored plates and text. The former show pathological lesions drawn from actual cases, the histories of which are given in sufficient detail. The drawing and coloring are absolutely first class and the selection of cases typical of the lesions. There are also a few microscopical sections in color.

The second half consists of about two hundred small pages of text, covering the diseases and treatment of this part of the body. It cannot of course be expected to be exhausted in this space. The different pathological conditions are subdivided as little as possible, and general principles emphasized. The work of the author, especially in the subject of accessory sinus disease, is so important that a concise monograph on this and other subjects is of great value. If the reader does not expect to find a complete textbook he can hardly fail to be well pleased by these two volumes.

Manual of Bacteriology. By ROBERT MUIR, M.A., M.D., F.R.C.P., (Ed.), Professor of Pathology, University of Glasgow, and JAMES RITCHIE, M.A., M.D., B.Sc., Reader in Pathology, University of Oxford. American edition (with additions), revised and edited from the third English edition by NORMAN MACLEOD HARRIS, M.B., Associate in Bacteriology, Johns Hopkins University. 965 pages with 170 illustrations. New York and London: The Macmillan Co. 1903.

The appearance of the third edition of this manual will be welcomed both by students and practitioners. It has come to be recognized both in this country and in England as the standard textbook of medical bacteriology.

The scope of the work is restricted to a consideration of the pathogenic micro-organisms. It deals, however, not only with bacteria but the disease producing protozoa and fungi as well. The hemameba of malarial fever, the ameba coli and the blastomyces are carefully described. It is to be regretted that Mallory's admirable method of staining the amebæ differentially is not given.

The value of the book is distinctly increased by the additions and alterations of the American editor, and the statements of such an able bacteriologist as Dr. Harris carry with them the stamp of authority. We think, however, that the changes he has incorporated should have been distinguished by brackets, or otherwise, from the original text, in justice both to himself and to the English authors.

A comparison with the second edition issued in 1899 shows that although much new matter has been added, the work of revision and elimination has been so thorough that the length of the volume remains practically the same. The size of the leaves is increased, and the book is printed from larger and better type. There are 44 more illustrations.

The authors have kept pace with the many advances made during the past three years. A new chapter on the bacteriology of the air, soil and water has been inserted, and the chapter on immunity has been amplified and includes an account of the recent important work and an explanation of Ehrlich's lateral chain theory.

The section devoted to tuberculosis is excellent, and the results of the recent studies of the varieties of tubercle bacilli and other acid-fast bacilli is clearly presented. We wish that Dorset's egg medium had been mentioned, as it is readily prepared and gives luxuriant growths of the tubercle bacilli.

The statement that the blood from paratyphoid patients never clumps *Bacillus typhosus* will have to be modified in view of the recent observations of Hünermann and others.

Atlas and Epitome of Traumatic Fractures and Dislocations. By PROF. DR. H. HELFERICH, Professor of Surgery at the Royal University, Greifswald, Prussia. Authorized translation from the German, edited by JOSEPH C. BLOODGOOD, M.D., Associate in Surgery, Johns Hopkins University, Baltimore, Md. Fifth edition, revised and enlarged. With 216 colored illustrations on 64 lithographic plates, and 190 figures in the text. Philadelphia and London: W. B. Saunders & Company. 1902.

Professor Helferich has written a book to serve as a reference book for the use of physicians in general practice, and as an introduction to the important subject of fractures and dislocations. This is the fifth edition of the book, and many skiagraphs have been added to it. The more common fractures are described at length, the rarer fractures are simply alluded to, and the book is profusely illustrated. The pathology of the various injuries is gone into very thoroughly, but the treatment of injuries is not elaborately dealt with. For reference the book will be very valuable, and it is a very attractive volume. The American editor of the volume has tried to supply the deficiencies that exist in treatment. Many of the methods advocated by Professor Helferich have long since been abandoned by Americans.

Clinical Lectures on Surgical Subjects. Delivered in University College Hospital by CHRISTOPHER HEATH, Past President of the Royal College of Surgeons of England, Emeritus Professor of Clinical Surgery in University College, London, and Consulting Surgeon to University College Hospital. Second series. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1902.

Mr. Heath has placed us under renewed obligations in contributing these clinical lectures, which are upon special subjects in which Mr. Heath is interested. The conversational style of the writer and his distinctly practical way of looking at a subject come out very strongly in these lectures.

Clinical Essays and Lectures. By HOWARD MARSH, F.R.C.S., Surgeon to and late Lecturer on Surgery at St. Bartholomew's Hospital, Consulting Surgeon to the Hospital for Sick Children, President of the Clinical Society of London, Hon. Member of the Medical Society, State of New York. London: J. & A. Churchill, 7 Great Marlborough Street. 1902.

In this little volume Mr. Marsh reprints certain selected essays and lectures that have been published elsewhere. His desire has been to give some of the knowledge that he has acquired during his years of experience in the diagnosis and treatment of disease. Some of the essays are of more than ordinary interest; for example, that on "Growth as an Agent in the Production and in the Removal of Deformity," and that on "The Etiology of Making Mistakes in Diagnosis," have distinctly a "Hunterian" character. The article on "Senile Tuberculosis" is of great value, in that the condition is not commonly recognized by medical men. Mr. Marsh has evidently observed accurately and reasoned carefully and soundly. It is to be regretted that more clinicians do not place their observations in a more permanent form. The whole volume is of great interest, and will well repay careful study.

The Practical Medicine Series of Year-Books, comprising ten volumes on the year's progress in medicine and surgery. Issued monthly. Under the general editorial charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume II. *General Surgery.* Edited by JOHN B. MURPHY, M.D., Professor of Surgery, Northwestern University Medical School. November, 1902. Chicago: The Year-Book Publishers, 40 Dearborn Street.

This year-book on general surgery, edited by Dr. Murphy, is very complete. It covers essentially the advances that have been made in surgery during the preceding year. The editorial comments are of a great deal of value in that they give the practical experience of the editor. We have kept a copy, for a time, as a reference book, to test its value, and we find that as a book of reference it is of positive value.

SEIZURE OF DOGS.

On June 23 the board of aldermen of the city of New York passed an ordinance providing for the seizure of all dogs found in the streets which are not in leash or else so muzzled as to prevent their biting. Owners of licensed dogs captured unmuzzled must be notified, and on payment of $3 they may redeem the animal within three days. The Society for the Prevention of Cruelty to Animals is charged with the work of gathering in and disposing of unmuzzled dogs, but the aldermen neglected to make any appropriation, and as the society has no funds to use for this purpose, the ordinance is not likely to be carried into practical effect until some provision has been made for the expense. All funds collected through the operation of the ordinance, it is stated, will go to the city chamberlain.

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PRELIMINARY TRAINING OF NURSES.

WITH the gradual raising of standard in various departments of educational work, it is not unnatural that renewed attention should be directed to the preliminary training of nurses. Apparently nursing has ceased to be a trade, and has become a profession with certain definite standards. The last few years has seen the organization of nurses in various parts of the country, and with this organization must come a definite feeling of the importance of the body to which they belong and of the necessity of forcing this recognition upon people at large. It has been noticeable for the past few years that both nurses themselves and physicians interested in the general problem have been suggesting a certain more definite preliminary training for women intending to take up the profession of nursing.

In the issue of the JOURNAL for Nov. 21, 1901, Dr. R. C. Cabot expressed the hope that in the course of time nursing might be made a "liberal profession." To this end he made various pertinent suggestions regarding the reform of training schools, and came to the following general conclusions: That the instructors of nurses should be paid; that nursing should be taught by nurses; that the preparation for private nursing should be taught in private families and by private nurses; and that the curriculum should contain liberal as well as purely technical studies.

Again in our issue for June 18, 1903, Dr. Francis P. Denny discusses the need of an institution for the education of nurses which shall provide for their training independent of the hospitals, before undertaking the actual work of hospital nursing. Dr. Denny believes that the nurse's diploma should come from this institution rather than from the

hospital, and that its award should represent satisfactory work in the preliminary course, together with service in a hospital in which there was a high standard of nursing.

All this points clearly in the direction we have indicated, that physicians as well as nurses are demanding more completely trained women, and that the educational standard must thereby be definitely and permanently raised. The matter seems to have reached a more or less definite solution in Philadelphia, where there has recently been organized, under the auspices of the Drexel Institute, a preparatory course of instruction for nurses. This movement has been instigated by Dr. S. Weir Mitchell and the superintendents of the leading training schools of the city. After due consideration of the question, members of the American Society of Superintendents of Training Schools for Nurses have reached the conclusion that if a preparatory course of training in scientific branches can be given, it would afford much needed relief for nurses during the first year of their actual technical training. The course of instruction which has been mapped out in the preliminary announcement includes such subjects as anatomy, physiology, medical chemistry, domestic science and economics, English, vocal expression, hygiene, bacteriology, and what is no doubt of equal importance, physical training in the gymnasium. Public lectures on art, science, literature, etc., which are from time to time given at the institute during the winter, are also to be open to the student. It is proposed to give a certificate to those who complete the full course, and the leading training schools of the city are to give preference to candidates who hold a certificate of the preparatory course.

This experiment, if we may call it by that name, is practically sure of success. Whenever standards have been raised, whether in medicine or other lines of work, there have always been students in sufficient numbers to meet the added demands made upon them. That this will also be true of nurses there cannot be the slightest question, and in general we must be in sympathy with a movement which tends to the betterment of what is becoming more and more distinctly professional work.

The consequences, however, of this elevation of standard and consequent extra time demanded will, no doubt, be felt in the increased payment which must be made to such highly-trained women. This we cannot regard as an unmitigated blessing. The standard fee of three dollars a day has long been established, is in general adequate for the work demanded, and we should regret for various obvious reasons to see a definite and permanent increase in the amount demanded by the best nurses. Already certain obstetrical nurses, and no doubt others, are asking and getting twenty-five dollars a week. We have not the slightest desire to begrudge this or any other amount which may be legitimately earned, but we must distinctly face the fact that a new class of nurses will be developed, inferiorly educated, who will in consequence give their services for smaller amounts. We need nurses for all classes in the community, and particularly for that class of persons whose means are moderate, but whose requirements are the same as with persons of much greater financial resources. In the development of nursing as a profession we certainly do not wish to lose sight of nursing as a humanitarian art, nor do we wish to lose sight of what practical nursing really is. We are somewhat skeptical as to the claim of nursing to be ranked as a "liberal profession," and we shall regret the day, which seems close upon us, when women trained as nurses will find it beneath their dignity to do the hard, menial, disagreeable work, which, after all, constitutes the essence of their calling. Even under existing conditions many nurses are far from being an unmitigated blessing in the household, and if further education is to increase this deplorable tendency we must forthwith call a halt. In the meantime we await with much interest the developments which are sure to come.

THE MORTALITY OF TENEMENT HOUSE POPULATIONS.

IN many of the large cities of Great Britain a very considerable portion of the population lives in single-room tenements under conditions very unfavorable to the occupants. In such cases, isolation of infectious diseases is practically impossible, unless the patient is taken at once to a hospital for treatment.

Dr. J. B. Russell, the former efficient health officer of Glasgow, has vividly described existing conditions in that city, in contrasting the life of the poor with that of the wealthy population: —

"Last of all, when *you* die, you still have one room to yourself, where in decency you may be washed and dressed and laid out for burial. If that one room were your house, what a ghastly intrusion you would be! The bed on which you lie is wanted for the accommodation of the living. The table at which your children ought to sit must bear your coffin, and they must keep your unwelcome company. Day and night you lie there, until with difficulty those who carry you out thread their tortuous way along the dark lobby and down

the narrow stair through a crowd of women and children." [1]

Dr. Russell has here graphically described a death among the abodes of the poor, but when the death is from infectious disease, the conditions are still worse, since the added danger of infection to the remaining members of the family only doubles the distress of the household.

Much has been done to alleviate these conditions by the enactment of ordinances regulating the amount of air space for each individual in such apartments and by the provision of hospitals for infectious diseases, but it still remains true that the death-rate of people living under such conditions is not only much greater than what it ought to be, but also very much greater than that of the population living in more spacious apartments. Much of this increased mortality must undoubtedly be charged to the account of poverty and intemperance, both of which are usually concomitants of the narrow and cramped conditions in which such people live.

In a recent paper read before the Royal Philosophical Society of Glasgow, by Dr. A. K. Chalmers, the present health officer of the city, [2] the author states his intention first to eliminate as far as possible the effect of external conditions, and to ask what part the house, considered simply as a place of residence, plays in the life history of its inmates, and to what extent its effect becomes an appreciable factor in the production of the death-rate. For this purpose he takes the population of the city at the last census, and arranges it in groups, distinguishing between the numbers occupying one, two, and three apartment houses, and those of all other sizes, and against each group places the deaths occurring during the census year 1901 and their equivalent rates.

Of the several tables published in this interesting paper, the following is selected as showing the conditions prevailing in Glasgow.

The contrast presented in Column 3 at once arrests attention. In a year in which the death-rate for the city was less than 21 per 1,000, it is scarcely exceeded by that of the two-apartment population (which forms nearly one half of the whole) and not even approached in the population occupying tenements of larger size. Yet in this same year the death-rate among the one-apartment population was 33 per 1,000, and this not in one district only, but calculated over nearly one seventh of the population distributed widely throughout the city.

[1] Life in One Room, by Dr. J. B. Russell, Glasgow, 1882.
[2] The Death-rate in One Apartment Houses: An Inquiry based upon the census returns of 1901, by A. K. Chalmers, M.D., D.P.H., Glasgow, 1903.

DEATHS AND DEATH RATES FROM "ALL" AND FROM "CERTAIN" CAUSES IN HOUSES OF SEVERAL SIZES. GLASGOW, 1901.

1	2	3		4		5		6	
Size of Houses.	Census Population.	All Causes.		Infectious Diseases		Phthisis.		Respiratory Diseases.	
		Deaths.	Death-rate per 1,000.	Deaths.	Death-rate per 1,000.	Deaths.	Death-rate per 1,000.	Deaths.	Death-rate per 1,000.
1 room.	104,128	3,405	32.7	771	7.4	247	2.4	792	7.6
2 rooms.	348,731	7,418	21.3	1,576	4.5	620	1.8	1,600	4.6
3 rooms.	151,754	2,081	13.7	290	1.9	178	1.2	362	2.4
4 and more rooms.	136,511	1,533	11.2	139	1.0	99	0.7	272	2.0

The general death-rate of the city was 20.6 per 1,000. The best tests of unsanitary conditions are a high infantile mortality, excessive prevalence of infectious and of respiratory diseases and a high diarrheal mortality. These were all to be found in this one-room community. Thirty-one per cent of the total number of deaths under five years occurred in these one-room tenements, and the death-rate from phthisis among them was also high. It is also a significant fact that 42% of the uncertified deaths and 38% of the deaths of illegitimate children occurred in these one-room tenements.

Of the total population of Glasgow, according to the census of 1901, 104,128 lived in one-room and 348,731 in two-room tenements, these altogether constituting about three fifths of the total population of the city.

In interpreting the meaning of the term "one-apartment house" Dr. Chalmers says: "We use the term one apartment for convenience, but does it not represent rather a manner of life than a mode of occupancy? We have many one-roomed tenants in houses of larger size, many also who in our one rooms reach standards, both of hygiene and morality, which guard us against any such arbitrary distinction as the simple question of size entails. But, in the main, the term may be retained to indicate an elementary stage in civic development, a stage in which the Scriptural injunction to wash and be clean has but limited currency."

There is but little information bearing upon this point in the reports of the large cities of the United States. The most suggestive data are to be found in the United States census volumes prepared by Dr. J. S. Billings for the census of 1890.

In the volume containing the figures for Boston it appears that the death-rate of Ward 8 (the Leverett-street District) was 34.6 per 1,000, and that of South Boston (Ward 13) was 33.0, and that of the North End (Ward 6) was 31.7, during the six years embraced in the report, while that of the Back Bay District (Ward 11) was only 15.8, and

that of the Fen District (Ward 22 A) was only 13.6 per 1,000.

When different diseases were considered the differences were still more striking. In Ward 8, with 180.9 persons to the acre, the death-rate from consumption was 671 per 100,000 living, and in Ward 13 it was 588 per 100,000, while in Ward 9 B, with 89 persons per acre (the Beacon, Chestnut and Pinckney street District), it was only 93.8 100,000.

These striking differences, however, appear to be due more to social conditions, such as poverty and intemperance, than to the simple factor of overcrowding in apartments large or small and of a greater or smaller number of rooms to each family.

APPENDICOSTOMY.

FOR the benefit of those of our readers who are not surgeons, and who have not attempted to keep pace with the somewhat hybrid terminology which has developed within the past few years, we desire to call attention to a unique operation first done by Weir, which is again reported by Willy Meyer of New York in the current number of the *Medical News*. Meyer gives to this operation the name "appendicostomy," which, no doubt, to many minds will at once convey a definite meaning. To those who are less familiar with recent surgical nomenclature, however, we beg leave to state that this operation consists in making use of the normal appendix as a means of gaining entrance to the cecum, for the purpose of irrigating the lower bowel. In a case of ulceration of the large intestine, Meyer succeeded in inserting a drainage tube into the lumen of the appendix, after suturing the organ to the abdominal wall, and thereby affording a channel for flushing the diseased bowel. Under this treatment, repeated daily or every other day, the ulcerations decreased, and the patient gained materially in weight. The technical details of the procedure we will not discuss; our intention is merely to call attention to an unusual operation of great ingenuity, if of somewhat limited applicability. Meyer says of it: "I certainly consider Dr. Weir's proposition a valuable addition to our operative resources, besides presenting the fascinating idea of making use of this otherwise absolutely useless organ." To find a positive use for the appendix, we agree, is certainly a surgical triumph of no mean order.

MEDICAL NOTES.

UNIVERSITY OF CALIFORNIA PUBLICATIONS IN PHYSIOLOGY. — It is reported that a series of publications on work in physiology at the University of California will be undertaken under the editorship of Prof. Jacques Loeb. Brief preliminary reports of investigations will be issued, followed by full reports as the investigations are completed. Numbers will appear at irregular intervals.

AN ENDOWED MEDICAL JOURNAL. — It is announced that a publication to be known as *The Journal of Infectious Diseases* is to appear in the fall under the editorship of Professors Hektoen and Jordan of the University of Chicago. The enterprise is rendered possible by an endowment provided by Mr. and Mrs. Harold McCormick, in memory of their son.

WOMEN PHYSICIANS IN CHICAGO MEDICAL SOCIETY. — Dr. Frances Dickinson and Dr. Rachel H. Carr have recently been elected members of the Board of Councillors of the Chicago Medical Society. This mark of distinction has not hitherto been accorded women in that organization.

KEROSENE DEBAUCH. — *American Medicine* states that according to the police of Philadelphia it is not an unusual thing for boys to become intoxicated by inhaling the fumes from kerosene. The vicinity where these debauchs have been observed is usually in the neighborhood of the railroad yards, where the empty oil cars are stationed. The method of obtaining the fumes is for the boys to climb upon the tank car, place their noses over the manhole and thus inhale the fumes. The effects produced are similar to those produced by alcohol: First, a feeling of exhilaration, then a period of stupor, and following is the period of deep sleep. It is stated that in several instances boys, drunk from these fumes, have been taken to hospitals in the vicinity. From the meager amount of observation in such cases, it is believed that the effects on the system are similar to those produced by alcohol.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 1, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 44, scarlatina 40, typhoid fever 23, measles 46, smallpox 0.

BOSTON FLOATING HOSPITAL. — The Boston Floating Hospital will make the first trip of the season 1903, July 7. This is a later opening of the work than usual, inasmuch as it is desired to maintain the hospital somewhat later in the fall than has heretofore been done. Fortunately, the weather up to this time has not been such as to demand the care which this hospital provides. It is reported that $11,000 has been received in cash

and pledges for the needed new boat. In the meantime the old one will be fitted up and used as heretofore, although considerably too small for the growing needs of the hospital. As we have hitherto stated, the Floating Hospital will this year be used to test the antitoxin serum for certain intestinal diseases of children. This work will be under the supervision of the Rockefeller foundation and under the direct charge of Arthur I. Kendall, Ph.D., of the Massachusetts Institute of Technology.

REMODELLING OF TENEMENTS. — The opposition at first brought to bear against the Board of Health in its attempt at sanitary reform in the tenement-house districts of Boston has ceased. Vigorous work is now being undertaken in four sections of the city, with the result that buildings previously almost uninhabitable have been made relatively attractive and sanitary. This work, begun under a special act of legislature in 1897, has continued since with decreasing opposition.

NEW YORK.

TETANUS ANTITOXIN AND THE FOURTH OF JULY. — In the latest bulletin of the State Health Department it is announced that the department is prepared to furnish tetanus antitoxin for use in cases resulting from Fourth of July accidents, and the announcement is also made that during the summer the State Antitoxin Laboratory will co-operate with the Rockefeller Institution in an investigation regarding the etiology and treatment of dysentery. Last year, it is stated, there was an outbreak of this disease in the vicinity of Yonkers and Mount Vernon, Westchester County, in which some valuable data were collected by the department.

CONDITION OF ADULT BLIND. — The commission to inquire into the condition of the adult blind in New York State, authorized by the last legislature and appointed by the governor, met in New York on June 25 and effected an organization, with Dr. F. Park Lewis, of Buffalo, as president, and Prof. O. H. Burrill, of Batavia, as secretary.

ANTITOXIN. — The President of the Board of Health has sent to the Mayor, in reply to a communication from the latter, a letter in which he says that the production of diphtheria antitoxin was begun by the department so that physicians might get satisfactory supplies, and also in order that in cases where the family of a patient was too poor to pay for the antitoxin it should be furnished free by the department. Some time after the original arrangement went into effect a provision was inserted in the charter permitting the department to sell its surplus supply. Accordingly the department sold large quantities to persons outside as well as in the city, such sale being due to the confidence felt in the purity of the antitoxin produced by it. It is the express opinion, however, that there are now on the market other products of antitoxin which are of as high grade as that of the New York health department. Believing that the sale of antitoxin to persons outside the city is contrary to the spirit of the charter, he states that he has informed such persons that they must arrange to make their purchases from other producers after July 1. He then suggests that hereafter the department shall disburse all its laboratory products free, as do other municipal and state laboratories, upon receiving the proper requisitions from department officers or private physicians. Such distribution would of course be confined to residents of the city. Should such an arrangement be carried out, between $20,000 and $25,000 annually will have to be furnished by the Board of Estimate and Apportionment, in addition to the present appropriation of about $50,000 for the maintenance of the laboratories.

VERDICT IN FAVOR OF TENEMENT HOUSE DEPARTMENT. — In the Seventh District Municipal Court a jury has returned a verdict in favor of the Tenement House Department, which sought to oblige the owner of a certain tenement house to remove the water-closet accommodations from the yard and place such accommodations on each floor of the house. The defendant's counsel argued that the act is unconstitutional, because it limits the owner's use of his land and premises, and, further, that the change is unnecessary and unreasonable. In approving the jury's verdict the officiating judge expressed the opinion that a citizen has not absolute right over his property, but holds his right subject to control and regulation for the benefit of the public. The rights of property, he said, like other ordinary rights, are subject to such reasonable limits to their enjoyment as will prevent them from being injurious, and to such reasonable restraint and regulation as is established by law. Sanitary experts and builders who testified at the trial stated that there are 9,000 tenement houses in New York which would require similar alterations if this decision is affirmed by the higher courts, and that the average cost would be more than $2,000 for each house. The case will be appealed.

Miscellany.

HARVARD MEDICAL ALUMNI ASSOCIATION.

THE twelfth annual meeting of the Association was held in Boston, on Wednesday, June 24, at 6.30 P.M. There were 151 members present. The following officers were elected:

President, — CHARLES FOLLEN FOLSOM, M.D., 1870, of Boston, Mass.

Ten Vice-Presidents, — JOHN CALVIN WEBSTER, M.D., 1867, of Chicago, Ill.; FREDERICK WILLIAM BORDEN, M.D., 1868, of Ottawa, P. Q.; GEORGE BRUNE SHATTUCK, M.D., 1869, of Boston, Mass.; ERASMUS DARWIN LEAVITT, M.D., 1870, of Butte City, Mont.; BEVERLY MACMONAGLE, M.D., 1876, of San Francisco, Cal.; ISADORE NATHAN BLOOM, M.D., 1881, of Louisville, Ky.; REYNOLD WEBB WILCOX, M.D., 1881, of New York, N. Y.; JOSIAH NEWHALL HALL, M.D., 1882, of Denver, Col.; PERCIVAL JAMES EATON, M.D., 1888, of Pittsburgh, Pa.; EDWARD FITCH CUSHING, M.D., 1888, of Cleveland, Ohio.

Treasurer, — WILLIAM HERBERT PRESCOTT, M.D., 1888, of Boston.

Secretary, — GEORGE SHATTUCK WHITESIDE, M.D., 1897, of Boston.

Assistant Secretary, — JOHN GREENLEAF WHITTIER KNOWLTON, M.D., 1900, of Boston.

Councilors, — (to serve from 1903 to 1907) CLARENCE JOHN BLAKE, M.D., 1865, of Boston; HENRY JACKSON, M.D., 1884, of Boston; MALCOLM STORER, M.D., 1889, of Boston.

The constitution of the association was changed, making it possible to create the office of assistant secretary.

After the meeting the first triennial dinner was held at Westminster Hotel. DR. C. J. BLAKE, president of the association for the last three years, officiated as toastmaster, introducing the speakers very happily.

At the outset he took occasion to say that the project of the new medical department for Harvard University and its new buildings would be the subject for consideration. Referring to what he termed the new era of medical education in this country, he deemed it fortunate to have as a guest one who had both foretold and helped to fulfill the coming of the new movement, introducing Dr. Henry P. Bowditch.

DR. BOWDITCH spoke of the enormous size of the buildings contemplated, due largely to the laboratory method of instruction; he dwelt upon the province of the lecturer, the needs of the elective system, and concluded with the prediction that by the next triennial dinner more definite results may be reported, hoping that in the meantime the buildings would meet with no untoward accidents in the process of their construction.

DR. JOHN COLLINS WARREN was introduced as not only a generous giver to Harvard University, both of his intellectual power and his earnestness, but also as a "generous inciter of others."

Dr. Warren devoted his remarks to an enumeration of the great gifts to the institution, and to the co-operation of the Brigham and other hospitals in the work that Harvard is doing. He also referred to the gift of $225,000 which has recently been made to the Harvard Medical School by one who wishes to remain unknown, and to a gift by Robert Bacon, Esq., of $60,000, to endow a curatorship of the Warren Anatomical Museum, in memory of the late Dr. J. B. S. Jackson.

DR. ARTHUR T. CABOT, in behalf of the Corporation of Harvard University, detailed the clinical advantages made possible, as well as the scientific work that has been going on for years, making itself felt throughout the country and the world. He alluded to the labors of the bacteriologists, the cancer investigation committee, the work of Dr. Councilman in the etiology of smallpox, drawing the conclusion that such work makes this school a specially favorable place for all medical research, and that money devoted in this direction is well spent.

MR. CHARLES A. COOLIDGE, architect of the new buildings, spoke concerning the architectural beauty and practical arrangement of the various laboratories, expressing the hope that by the next triennial dinner the members would see the buildings in a shape to speak for themselves.

PRESIDENT BLAKE'S yielding of the Chair to his successor was graceful in word and manner.

PRES. CHARLES F. FOLSOM reviewed the history of medical instruction in the School, its progress in the struggle against "that failure to grasp the situation, misnamed conservatism," and traced the growth of what he called the Harvard "spirit." While cherishing pride in her traditions, he still felt that there were problems yet to be solved. He deplored the small representation of medical men in the machinery of government of the university, but hoped the day of better things was coming. He thought a lesson could be learned from the Medical School, and because the public seems to approve its work he believed it was a lesson which the college might be wise not to be too late in learning.

LAY ADVICE TO RECENT GRADUATES IN MEDICINE.

IN an editorial in the *Outlook* of June 27 are some timely bits of advice to recent college graduates, one of which is intended for graduates in medicine. It is well worthy of quotation, and we therefore present it in full.

After giving some sound advice to theological students, the writer goes on to say: "Or you are going to practice medicine. If your patients were all reasonable men and women, your task would be easy; but they are not. Even in their best estate they are not all reasonable men and women, and you will have to deal with them when they are not in their best estate, but are morbid. You will have to deal with patients who throw your medicine out of the window, and still expect you to cure them; in one house with a mother busy with other things and careless of the sick child; in another house with a mother whose weak and tearful sympathy does much to negative the influence of your presence and the effect of your medicines. It is not enough for you to know physiology and anatomy and therapeutics; not enough for you to know what your medical school has told you; you must know men and women — their physical constitutions, their mental and moral constitutions. You must understand them — their life, their narrownesses, their prejudices, their unreasonablenesses. You must see into them, that you may minister to them."

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 20, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung disease.	Diphtheria and croup.	Diarrheal Diseases.	Scarlet fever.
New York . .	3,785,156	1,137	431	28.75	11.51	4.66	10.02	1.67
Chicago . . .	1,885,000	451	135	25.49	12.65	2.00	6.52	1.56
Philadelphia	1,378,527	420	111	32.62	10.23	2.14	5.48	1.90
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore .	533,712	135	30	26.66	8.95	—	5.18	.74
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	130	58	42.35	6.16	1.54	16.17	3.85
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	67	28	34.31	11.93	1.49	17.90	—
Boston . . .	603,163	154	45	20.78	12.33	1.29	1.95	1.29
Worcester . .	132,044	33	15	2.24	9.09	—	6.06	—
Fall River . .	115,549	41	23	24.39	14.63	—	9.75	—
Lowell . . .	101,959	34	12	17.64	11.76	2.94	2.94	—
Cambridge .	98,639	23	4	26.09	—	—	4.35	4.35
Lynn	72,497	17	4	17.65	—	—	—	—
Lawrence . .	69,766	25	12	24.00	8.00	4.00	—	4.00
Springfield .	69,389	17	6	23.52	5.88	—	5.88	—
Somerville .	68,110	9	3	11.11	—	—	—	—
New Bedford	67,198	21	8	52.38	9.52	—	—	42.86
Holyoke . . .	49,286	16	9	6.25	—	6.25	—	—
Brockton . .	44,873	7	1	14.30	—	—	—	—
Haverhill . .	42,104	12	2	41.65	—	8.33	—	—
Newton . . .	37,794	7	1	—	14.30	—	—	—
Salem	36,876	9	2	—	11.11	—	—	—
Malden . . .	36,286	11	4	18.18	—	—	—	—
Chelsea . . .	35,876	7	2	14.30	—	—	—	14.30
Fitchburg . .	35,069	—	—	—	—	—	—	—
Taunton . . .	33,656	10	3	30.00	—	10.00	—	—
Everett . . .	28,620	4	—	25.00	—	—	—	—
North Adams	27,862	3	—	66.67	—	33.33	—	—
Gloucester .	26,121	3	—	66.67	—	—	—	—
Quincy . . .	26,042	7	2	—	14.30	—	—	—
Waltham . .	25,198	3	1	33.33	—	—	—	—
Brookline . .	22,608	3	—	33.33	—	—	—	33.33
Pittsfield . .	22,589	6	3	—	33.33	—	—	—
Chicopee . .	21,031	5	2	—	—	—	—	—
Medford . .	20,962	2	—	—	—	—	—	—
Northampton	19,883	4	0	25.00	—	—	—	—
Beverly . . .	15,302	4	1	25.00	—	—	—	—
Clinton . . .	15,161	2	—	—	100.00	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	2	1	—	—	—	—	—
Woburn . . .	14,300	1	1	—	—	—	—	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	—	—	—	—	—	—	—
Attleboro . .	13,677	3	—	—	33.33	—	—	—
Marlboro . .	13,609	—	—	—	—	—	—	—
Melrose . . .	13,600	2	—	—	—	—	—	—
Westfield . .	13,418	6	2	16.67	16.67	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	—	—	—	—	—	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	2	0	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	3	—	—	—	—	—	—
Plymouth . .	10,730	2	1	50.00	—	—	—	—

Deaths reported, 2,860; under five years of age, 963; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 804, acute lung diseases 305, consumption 311, scarlet fever 54, whooping cough 27, cerebrospinal meningitis 3, smallpox 8, erysipelas 5, measles 37, typhoid fever 54, diarrheal diseases 218, diphtheria and croup 82.

From whooping cough, New York 9, Chicago 2, Philadelphia 6, Baltimore 1, Pittsburg 2, Boston 1, Fall River 1, Lowell 1, Lynn 2, Waltham 1, Beverly 1. From erysipelas, Chicago 2, Philadelphia 1, Baltimore 1, Boston 1. From smallpox, Philadelphia 4, Pittsburg 4.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending June 6, the death-rate was 14.3. Deaths reported, 4,145; acute diseases of the respiratory organs (London) 171, whooping cough 99, diphtheria 38, measles 136, smallpox 6, scarlet fever 40.

The death-rate ranged from 6.4 in Walthamstow to 29.1 in Middlesbrough; London 13.8, West Ham 14.1, Brighton 12.1, Portsmouth 10.7, Southampton 9.0, Plymouth 14.4, Bristol 8.8, Birmingham 14.4, Leicester 10.4, Nottingham 14.2, Bolton 17.7, Manchester 17.8, Salford 14.0, Bradford 13.1, Leeds 12.5, Hull 14.0, Newcastle-on-Tyne 13.6, Cardiff 12.1, Rhondda 17.9, Liverpool 19.9, Hornsey 8.0, Sheffield 18.9.

METEOROLOGICAL RECORD.

For the week ending June 20, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	Rainfall in inches.
S. . 14	29.86	62	70	54	81	81	81	S	S E	3	8	F.	O.	O.
M . 15	29.69	55	56	50	94	90	92	N	N E	9	25	R.	R.	2.45
T. . 16	29.84	51	54	48	90	78	84	N E	N	15	8	O.	O.	.11
W . 17	29.94	54	59	50	72	81	76	N E	E	6	8	O.	F.	O.
T. . 18	30.00	56	59	52	88	80	84	S E	S	6	5	O.	O.	T.
F. . 19	29.92	58	65	51	83	81	82	S	S	7	11	O.	F.	O.
S. . 20	29.88	58	62	53	83	91	87	S	E	4	13	O.	R.	.02
☞	29.87		61	51			84							2.58

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING JUNE 27, 1903.

H. E. AMES, medical inspector. Commissioned medical inspector, from Jan. 20, 1903.

C. F. STOKES, surgeon. Detached from the Navy Yard League Island, and ordered to the Bureau of Medicine and Surgery, Navy Department.

C. D. BROWNELL, S. G. EVANS, C. E. RIGGS, M. K. JOHNSON, W. B. GROVE, E. O. HUNTINGTON, surgeons. Commissioned surgeons from March 3, 1903.

H. E. ODELL, passed assistant surgeon. Commissioned passed assistant surgeon from Nov. 8, 1902.

J. J. SNYDER, assistant surgeon. Detached from the Naval Hospital, Philadelphia, Pa., and granted sick leave.

W. W. VERNER, assistant surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

W. M. WHEELER, L. MORRIS, F. T. PLEADWELL, C. P. KINDLEBERGER and F. C. COOK, surgeons. Commissioned surgeons from March 3, 1903.

G. PICKRELL, surgeon. Detached from the "Iowa" and ordered home to wait orders.

BOOKS AND PAMPHLETS RECEIVED.

Surgical Diseases of the Abdomen, with Special Reference to Diagnosis. By Richard Douglas, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

A Manual of Surgical Treatment. By B. W. Watson Cheyne, C.B., M.B., F.R.C.S., F.R.S., and F. F. Burghard, M.D. and M.S. (Lond.), F.R.C.S. In seven volumes. Volume VII, illustrated. Philadelphia and New York: Lea Brothers & Co. 1903.

Le Développement Chirurgical d'une Double Circulation Complémentaire dans le Traitement de Quelques Maladies Hépato-Spléniques. By B. Schiassi, of Boulogne, France. Reprint. 1903.

The Value of the Roentgen Rays in the Treatment of Carcinoma. By Carl Beck, M.D., of New York. Reprint. 1903.

The Roentgen Rays in Differentiating between Osteomyelitis, Osseous Cyst, Osteosarcoma, and Other Osseous Lesions, with Skiagraphic Demonstrations. By Carl Beck, M.D., of New York. Reprint. 1903.

Exploratives Princip und Technik beim secundären Brustschnitt. By Carl Beck, M.D., of New York. Reprint. Berlin. 1903.

Corrected Neat Union in Fractures of the Radius and Ulna of both Forearms. By Carl Beck, M.D., of New York. Reprint. 1903.

Disease of the Pancreas, its Cause and Nature. By Eugene L. Opie, M.D. Illustrated. Philadelphia and London: J. B. Lippincott & Co. 1903.

Modern Materia Medica and Therapeutics. By A. A. Stevens, A.M., M.D. Third edition. Entirely re-written. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

The Practical Application of the Röntgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A.M., M.D., and Eugene Wilson Caldwell, B.S. Illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 903.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. II. June, 1903. Illustrated. Philadelphia and New York: Lea Brothers & Co.

Original Articles.

SUBPARIETAL INJURIES OF THE KIDNEY.[1]

BY FRANCIS S. WATSON, M.D., BOSTON.

A PERSONAL experience of six cases of subparietal injury of the kidney has recently led me to make a thorough study of the subject, in the course of which I have collected, formulated and analyzed clinical data to the number of 660 cases, which include all previously published series of importance, all but about 78 individual cases scattered through the literature, these being inaccessible to me at this time, and 25 hitherto unreported, amongst which are the 6 treated by the writer personally.

The investigation has served to confirm or strengthen many of the views of previous writers upon this subject, and has brought to notice certain other features, to which but relatively little attention has hitherto been given. The latter will be considered first; they are as follows:

NATURE OF THE ACCIDENT.

Laceration or serious injury of the kidney may be produced by muscular action alone, and in some instances by what seems a very inadequate degree of force. There are eleven examples of this in the series as well as one of the author's cases.

ELEVEN CASES IN WHICH THE KIDNEY WAS INJURED BY MUSCULAR ACTION ALONE.

(1) *Kellermann.* — A man made a sudden spring backward, felt, in so doing, a violent pain in the left renal region. Hematuria appeared at first urination afterward, and continued for four days, then fever, and a few days later a swelling in the left loin, which increased gradually, was incised on the 18th day, and proved to be a large perinephritic abscess. Drainage. Recovery.

(2) *Hensgen-Siegen.* — A man in lifting a sick woman across a bed felt severe pain in the loin. Hematuria followed at once, and persisted for three days well marked, and for three weeks moderately, the urine then became normal. Expectant treatment. Recovery.

(3) *Same author.* — A seventeen-year old boy lifted a heavy weight. Severe pain in the lumbar region, which was very soon followed by hematuria, the latter persisted, the blood in the urine being abundant all the time, for thirteen days, and subsequently recurred as soon as the patient exerted himself. Treatment expectant. Patient still under observation.

(4) *Franz.* — A man bent the body sharply backward, while carrying a heavy weight. Pain in both kidneys, hematuria — profuse — followed three hours later. This continued for fourteen days, the amount of blood being very large. On the eighth day after the accident he had a chill and a rise of temperature; this was repeated several times during the next twenty-four hours. Expectant treatment. Recovery. The patient was in a critical condition for several days.

(5) A man ruptured his kidney by catching in his arms a heavy sack of meal as it fell from the back of his cart, behind which he was walking.

(6) A man ruptured his kidney by sudden bending forward of the body to avoid striking a burden, which he carried on his shoulders, against a low archway.

(7) A man ruptured his kidney, with *fatal result*, by the muscular effort made in delivering a blow at an opponent with whom he was boxing.

(8) *Campbell.* — A young girl of fourteen in jumping over a hedge, and bending her body sharply forward and to one side in so doing, was seized with violent pain in the loin, fainted and hematuria followed, the amount of blood being abundant, though the duration of the hematuria was short.

(9) *Morris.* — A woman of sixty-six was seized with severe pain in the loin, attending the strain made in lifting a heavy box from shelves. On the following day, fever, rigors and pain resembling renal colic ensued, and persisted without abatement eleven days. Six weeks later — the symptoms still being present though less severe, and loss of weight being marked and progressive — the left kidney was exposed in the loin. On incising the fibrous capsule, two or three teaspoonfuls of bright blood issued from beneath it. The capsule was seen to have been lifted from the kidney by the hemorrhage over an area of moderate extent. The patient made a rapid recovery. (Hematuria not mentioned as having been present.)

(10) *Morris.* — Following a muscular effort, a young woman had a severe attack of pain in the loin, succeeded by a sharp rigor, and hematuria of short duration. During the next six weeks every attempt to get up and go about brought on a recurrence of pain and hematuria. For the last three of the six weeks, the pain became frequent or continuous at night. Frequent urination was present throughout.

Nephrotomy was performed through a lumbar incision eight weeks after the injury. The lower end of the kidney presented an area of dark color, which was found to be softened kidney tissue and effused blood. This was removed, and, together with the nephrotomy wound, was sutured. The patient made rapid recovery and was freed from all symptoms.

(11) The most curious case of all is that reported by Voit, of a woman whose kidney was ruptured by her husband's grasping her forcibly about the waist while waltzing. Severe hematuria promptly ensued, and she suffered at the moment of receiving the injury violent pain in one kidney. Hematuria continued for nearly two months, with occasional intermissions. At the end of this time there were chills, fever and the blood in the urine was replaced by pus. A perinephritic abscess formed, the pus was evacuated a week later by a lumbar incision, and the patient made a good recovery. The kidney was seen at the time of the operation to have been lacerated.

LACERATION OF THE KIDNEY OCCURRING AS THE ONLY RESULT OF BLOWS UPON THE FRONT OF THE ABDOMEN.

In twenty cases of the series, blows or falls upon the front of the abdomen are stated to have been the cause of laceration of the kidney. In all but two of them this was the sole result of the accident. In these two other abdominal organs suffered as

[1] Read before the American Association of Genito-Urinary Surgeons, May 14, 1903, Washington, D. C.

well as the kidney. This does not take into account a considerable number of other cases in which the renal condition was brought about by a crushing force passing over the front of the abdomen while the patients were lying upon the back.

The practical importance of this observation is to warn the surgeon not to be thrown off his guard with respect to injury of the kidney when the accident has been of this character, which might well happen, especially in cases in which hematuria is delayed or absent.

WHEN A SINGLE INTRAPERITONEAL ORGAN IS INJURED IN ASSOCIATION WITH LACERATED KIDNEY, IT IS ALWAYS ON THE SAME SIDE AS THE INJURED KIDNEY.

There is no case reported in the whole series of which the above statement is not true. For example, if the right kidney be injured, the liver, or ascending colon, may be involved in association with it, if there be but a single intraperitoneal organ that has suffered — but never the spleen or the descending colon. When there are multiple intraperitoneal injuries, this rule, of course, has no application. Inasmuch as the latter cases are of very rare occurrence, while injury of a single intraperitoneal organ in connection with laceration of the kidney is relatively frequent, this fact has a practical bearing in those cases in which associated injury of an intraperitoneal organ being suspected, and a laparotomy having disclosed an abdominal cavity filled with blood, no time need be lost in looking for the source of the hemorrhage elsewhere than upon the same side as that of the injured kidney. It also will lead the surgeon to enter the abdomen by an incision on that side, except in the rare instances in which there is uncertainty as to which kidney has been injured, or whether both of them may not have suffered.

In the great majority of instances it is the spleen which is involved in connection with the left kidney, and the liver with the right one; but intraperitoneal hemorrhage comes from the kidney through a rent in the overlying peritoneum, in an even larger number of cases than from either the liver or spleen. The relative frequency of the injury of the different intraperitoneal structures associated with that of the kidney is as follows:

Laceration of the overlying peritoneum, 24 cases; laceration of the liver, 12 cases; laceration of the spleen, 11 cases; laceration of the spleen and liver, 2 cases; mesentery, 3 cases; omentum, 1 case; intestine, 3 cases; total, 56 cases.

THE OCCURRENCE OF ABDOMINAL SYMPTOMS IN CONNECTION WITH THE RENAL INJURY IN THE ABSENCE OF INTRAPERITONEAL LESION.

Symptoms which are usually associated with peritonitis, or intraperitonal lesions, such as distention, tympanites, vomiting, muscular rigidity, etc., occurred in 18 cases, in 8 of which operation demonstrated the absence of any intraperitoneal complication, and in the other 10 the symptoms subsided so rapidly as to make it reasonable to assume the absence of any such complication, or, if it were present, that it was of trivial character. Such symptoms as the above are not infrequently seen in connection with cases of what appear to be abdominal muscular contusions only.

When these symptoms are present in cases of kidney injury complicated by intraperitoneal lesions or laceration of the peritoneum, the following features help to distinguish them from those in which they do not represent such conditions:

In the latter — the *uncomplicated* ones — they usually are most marked immediately or very soon after the accident, are of relatively short duration, and are not progressively severe. In the former, on the contrary, they are progressive, or appear for the first time, or become more marked later in the course of the case. Pain is deeper seated, rigidity and distension are greater, and the former more extended over the whole abdomen when intraperitoneal lesions are present than in the cases in which they are not. The one sure sign by which injury of the peritoneum overlying the kidney, or of intraperitoneal organs when accompanied by hemorrhage, can be recognized, is the presence of free fluid in the peritoneal cavity.

It is to be noted that there is in the series a larger number of cases in which abdominal symptoms *did* represent intraperitoneal complications, than there is in which they did *not*. Furthermore, there are several recorded in which there were *no abdominal symptoms*, although severe, and in a few instances fatal, intraperitoneal lesions were present. The following is an illustrative case of the latter. It is that of a child reported by Wheeler,[2] who was run over by a cart, the wheel passing across the front of the abdomen. An hour or two later it was brought to the hospital and played about upon the floor without showing any evidence of injury for the next hour, at the end of which time there was sudden collapse, and death followed three hours later. Autopsy showed laceration of the right kidney and liver. There was no blood in the urine, which was passed once soon after admission to the hospital.

The *duration* of abdominal symptoms in eight *uncomplicated* cases, and the time of their appearance, was as follows:

Case.	*Time of Appearance.*	*Duration.*
1.	Immediate.	One day.
2.	"	Three days.
3.	"	Five "
4.	End of first day.	Four "
5.	"	Three "
6.	Second day.	Six "
7.	"	Three "
8.	"	Four "

TUMOR.

There are four points with regard to the presence of tumor in the loin to which the writer wishes to call attention, to wit: (1) The relative proportion of the cases in which it represented different conditions in this series. (2) The time of its first appearance with reference to its nature. (3) The increase in its size. (4) Its duration without becoming infected.

(1) The first is shown as follows: There were 111 instances out of the total number of 486 uncomplicated cases, in which tumor of the loin is noted as present. In 39 of them the tumor was

[2] Trans. Royal Acad. of Med., Ireland; vol. xvi, p. 365, 1898.

formed by perirenal extravasation of blood, in 4 hematonephrosis, in 28 traumatic hydronephrosis, in 38 perinephritic abscess, in 2 pyonephrosis.

(2) The time of its first appearance, with reference to its nature, is shown in the following tables: *Thirty-five cases of perirenal hematoma*, or *hematonephrosis ; time of first appearance :* 25, immediate; 1, 12 hours; 1, 1 day; 2, 2 days; 1, 3 days; 2, 7 days; 2, 14 days; 1, 21 days; total, 35 cases.

The last three cases were secondary hemorrhages. With them included, the average time of appearance of the tumor is about two days after the receipt of the injury; excluding them, it becomes about sixteen hours.

Seven cases of traumatic hydronephrosis; first appearance: 1 case, 1 day; 2 cases, 7 days; 2 cases, 28 days; 1 case, 42 days; 1 case, 56 days; total, 7 cases; the average time of first appearance was about twenty-four days.

Twelve cases of perinephritic abscess; first appearance: 1 case, 4th day; 1 case, 5th day; 4 cases, 7th day; 1 case, 8th day; 1 case, 14th day; 2 cases, 28th day; 1 case, 30th day; 1 case, 35th day; average time of first appearance about fifteen days.

From the above it is seen that the majority of tumors which are perirenal hematomas appear immediately or very soon after the accident.

That the average time of first appearance in those in which the tumor represents hydronephrosis is considerably later than in those in which it is perinephritic abscess. The number of cases of the two latter conditions is, however, too small to be of value for such a comparison.

(3) Increase in size of the tumor does not *necessarily* imply dangerous hemorrhage, provided it does not take place rapidly or continue too long. This is shown by four cases in which there was gradual increase in size noted as continuing for periods of between six and twenty-four hours, the patients all recovering under expectant treatment. On the other hand, there were six others in which a more rapid increase in size occurred, accompanied by the general signs of progressive hemorrhage, on account of which operations were performed, laceration of the renal blood vessels being disclosed in four of them, and excessive hemorrhage from the parenchyma of the organ in the other two.

In sixteen cases of perinephritic abscess, *gradual* increase in size of the tumor is reported to have occurred. The same was true in eight of the cases of hydronephrosis.

The nature of the tumor in a considerable number of the instances in which it was perinephritic abscess was indicated by chills and rise of temperature, concurrently with or shortly after its appearance. Chills and fever, however, are mentioned in connection with a number of other cases in which no suppuration took place.

(4) Hydronephrosis and perirenal extravasation may continue to be present for considerable length of time without infection and suppuration occurring. This is seen in four of the former conditions, two of which were present without infection for one month each, and the other two for three months each, while in seven cases of the latter, the duration without infection is reported as fourteen days in two, three weeks in two, twenty-four days in one, and one month in two.

The features of the subject which have been dealt with thus far are, as has been said, such as have received but little attention. Before passing to an analysis of the clinical data with reference to the question of treatment, further details must be considered, which have been more fully discussed by others. These are the following:

FREQUENCY OF SUBPARIETAL INJURY OF THE KIDNEY.

The frequency of the injury may be judged from the following quotations:

Out of 2,610 autopsies made at the Middlesex Hospital between the years 1873 and 1883, there were but 12 in which this condition existed. Goldstein reports 22 cases as the whole number admitted to the Friederichshain Hospital between 1882 and 1902; Waldvogel, 21 from König's clinic at Göttingen between 1895 and 1900; Wyss, 14 from Krönlein's clinic during the past twenty years. At the Boston City Hospital there have been 25 admitted during the last fourteen years.

The relative frequency of injury of the kidney as compared with that to other abdominal organs caused by abdominal contusions is shown by the following table, published by Makins. Traumatic lesions of various abdominal viscera occurred in 89 out of 292 cases of abdominal contusions, in this order of frequency —

	No.		*Per cent.*
Kidney	35	or	39
Intestine	22	,,	23
Liver	15	,,	16
Spleen	10	,,	11
Bladder	4	,,	5
Mesentery	3	,,	3

SUPPOSED MECHANISM BY WHICH THE INJURY IS PRODUCED.

In a relatively small number of cases the kidney is lacerated by direct impact of the ribs, when the latter are fractured immediately over the organ.

Morris quotes Küster to the following effect: "The only theory which satisfactorily explains lacerations of the kidney after non-penetrating wounds is that of hydraulic pressure acting through the full vessels and pelvis, and causing the organ to burst along lines for the most part radiating from the hilus toward the point of maximum impact of the lower ribs, the opposing resistance being supplied by the vertebral column."

"Experiments performed with flaccid kidneys thrown with some force upon the floor showed that only superficial laceration was thus produced."

"On the other hand, when the pelvis and arteries were injected and ligatured after closure of the vein, and the organ thrown down, there ensued deep laceration of the kidney substance."

The majority of rents found in subparietal renal injuries are in the direction of the transverse axis, and are most marked near the middle of the organ, which is its narrowest and weakest part. A great many different forms of wounds, however, are met with.

The ability of the kidney to maintain a useful

degree of functional capacity, and also a remarkable power of regeneration of its tissues after severe traumatisms, has been shown by numerous experiments, as well as clinical and postmortem observations. The readiness with which the healing of wounds of the organ occurs has often been noted.

Among the more recent experiments with reference to some of the above points, those of Dolgoff are appropriate in this connection. "Dolgoff found that severe laceration of the kidneys of dogs, even the tearing of them in halves, did not result fatally. Also that the animals survived the removal of the cortical portion of one kidney, and of half of the cortex of the other, provided it was done gradually and at intervals, but if done simultaneously, death followed speedily.

Wounds of the medullary portion were graver in their consequences than those of the cortex. Simultaneous injury of one half of the medullary portion of both the organs was always fatal.

If one kidney was removed, injury of the medullary portion or cortex of the other killed the animal slowly.

Wounds of the kidney healed more readily and rapidly if the capsule was preserved, and especially if its cut edges were united.

The renal tissue remaining after removal or injury of parts of it showed great regenerative power.

The urine of animals with wounded kidneys showed albumen and an excess of uric acid."

HEMORRHAGE.

Hemorrhage occurs as: (1) Hematuria; (2) perirenal; (3) intrarenal (hematonephrosis, or subcapsular); (4) intraperitoneal.

HEMATURIA.

This is the most constant and, of course, the most characteristic symptom of the renal injury. That it does not alone, if in moderate degree, warrant the diagnosis of laceration of the organ, is shown by such well-known examples as those of individuals who have attacks of it after riding a hard-gaited horse. It has not infrequently been observed as the result of manipulation of the kidney by physicians when examining patients.

In patients having renal calculus or malignant disease of the kidney, and in those who are subject to attacks of paroxysmal hematuria, it would naturally be liable to occur in connection with injuries without necessarily implying that the kidney was lacerated. In the absence of any of the above conditions, hematuria, if the quantity of blood be at all large in the urine, is presumptive evidence of the existence of laceration of greater or less extent, and if a tumor in the loin is present as well, the diagnosis is, practically speaking, certain. Hematuria is present in at least 80% of all cases.

Absence or delay in its appearance occur in a small proportion of instances. In 340 of the cases of this series hematuria was absent in 7; delayed in 11 and intermittent in 6 of them.

The *time of appearance of hematuria* after the accident was noted in 117 cases. In 106 of them it was seen in the first passage of urine; in 11 it was delayed, for varying periods between 12 hours and 5 days.

The *delay* in the appearance of hematuria, if not long, is sometimes referable to thrombus formation, and the subsequent dislodgment thereof, in other instances to obstruction of the ureter. *Absence* of hematuria is due to one of the following causes: Tearing across of the renal pelvis, ureter or blood vessels; disintegration of the kidney, or obstruction of the outlet of the renal pelvis.

DURATION OF HEMATURIA.

The average duration of hematuria in 167 cases in which the time was noted was 8 days. The longest durations were reported in 7, as follows: 56 days, 46 days, 42 days, 28 days, 21 days, 21 days, 18 days.

In none of the instances of long duration was the amount of blood in the urine abundant at any one time.

PERIRENAL HEMORRHAGE.

Perirenal hemorrhage takes place from the renal parenchyma, the fibrous capsule being ruptured and allowing the blood to make its exit through the rent, from the renal blood vessels when they are injured, or from the numerous small vessels of the perirenal fat tissue.

It manifests itself by an area of percussion dullness, or the formation of a tumor in the loin, of greater or less extent according to the amount of blood poured out. If very abundant the constitutional signs of progressive hemorrhage become evident, and the tumor increases rapidly in size. These symptoms are most conspicuous in connection with injury to the renal vessels. *Spontaneous arrest* of such bleeding, even in the latter case, is, however, sometimes seen. In one case — Guinard's,[3] — which was operated upon the eighteenth day there had been a laceration of the renal artery, and yet the amount of blood which had been poured out into the perirenal tissues had not been sufficient to endanger the life of the patient.

The spontaneous arrest is due in part to the pressure exercised upon the growing hematoma by the overlying peritoneum when the latter is firmly attached. When, on the contrary, it is relaxed, as it not infrequently is, the only restraint to continued hemorrhage is from thrombus formation. This occurs quickly enough in some instances to avert immediate danger. Occasionally the thrombus becomes dislodged and gives rise to secondary hemorrhage, which is apt to be more serious than the primary one.

The hematoma formed around the kidney and behind the peritoneum pushes the latter forward, and may attain very large size. The writer in one of his cases found a blood clot extending from the diaphragm to the border of the pelvis, pushing the peritoneum far forward into the abdominal cavity. In this case the renal vein had been torn across.

When the capsule is not torn, the blood from the renal parenchyma may coagulate within the pelvis and (or) beneath the capsule, blocking the orifice of the ureter, distending the pelvis enormously, interfering with the urinary function and the circulation of the blood, producing a great enlargement of the organ by the latter, and dissecting the fibrous capsule from its surface. When this occurs, it is

[3] Rev. de Chir., 1897.

announced by the sudden cessation of hematuria, appearance or increase in size of a tumor in the loin, and accession of pain.

Hemorrhage may arise from the vessels of the perinephritic fat tissue *alone*, or in connection with intrarenal bleeding, no laceration of the kidney being present. This occurred in one of the writer's cases. When there is no intrarenal bleeding, that which occurs from the perinephritic fat blood vessels, if sufficiently abundant, which it rarely is, shows itself as a tumor in the loin, and hematuria will be absent.

Intraperitoneal hemorrhage arising from the kidney involves the necessary existence of a rent in the peritoneum overlying it.

There were 20 cases in the whole series in which intraperitoneal hemorrhage proceeded from the kidney or its blood vessels, and through a laceration in the peritoneum. In none were there associated intraperitoneal lesions; in 16 of them the renal blood vessels were torn.

RUPTURE OF THE RENAL BLOOD VESSELS.

In addition to these 16 there were 4 others in which the renal blood vessels were injured, but the peritoneum was not torn, the hemorrhage being retroperitoneal. Both vessels were torn in 3 cases; the artery alone in 1, and the vein alone in the remaining 14 — altogether 20 cases in which the renal blood vessels were involved.

Aneurysm of the renal vessels may result in these cases (Morris has collected 19 examples of this condition) and give rise to serious or fatal hemorrhage, sometimes at remote periods after the original injury.

SUPPURATION.

Suppuration occurs as perinephritic abscess, pyonephrosis, suppurative nephritis, purulent peritonitis.

Its frequency is variously estimated in the series published by different writers. Grawitz found 22 instances of suppuration in 90 cases. Küster reports it as having been fatal in 27 out of a total of 222 uncomplicated cases. Out of 486 uncomplicated cases of the present series it is noted in 68, in which it appeared in the following forms: Pyonephrosis, 6; suppurative nephritis, 4; purulent peritonitis, 9; perinephritic abscess, 38; not stated, 11; total, 68.

The infection which results in suppuration is invited by the open door afforded by the wounded organ, and may take place through the blood channels, from the bladder or from the intestine. The experiments of Delbet are interesting in this connection. He produced infection of an injured kidney by injecting immediately previous to crushing the organ 1 cc. of a solution containing 1 drop of a virulent culture of the bacillus commune coli to 10 cc. of fluid. The animals — rabbits — died shortly afterward. Rich colonies of the bacillus commune coli were found both in the renal parenchyma and the perirenal tissue. In control animals with sound kidneys this was not the case.

The relative rarity of ascending infection from the bladder in cases of traumatic hydronephrosis, as compared with the more frequent infections that occur in perirenal extravasations, strengthens the view that the route of bacterial invasion is more often through the blood current or from the intestinal tract, in the case of the latter, than from the bladder.

CAUSES OF DEATH.

It is from the uncomplicated cases alone that an accurate estimate of the mortality can be derived. The complicated cases have been included, however, in the study, but are considered separately. Cases having lacerations of the peritoneum are classed with those having intraperitoneal lesions among the complicated ones.

HEMORRHAGE.

The most fatal factor in subparietal laceration of the kidney is hemorrhage.

It was responsible for 25 deaths out of the total number of 112 *uncomplicated* cases which ended fatally. The nature of the hemorrhage in these 25 fatal cases was as follows: Hematuria in 8 (in 7 of them it was secondary); in 12 perirenal extravasation of blood (4 of them having the renal vessels torn, and in 8 the blood proceeding from the renal parenchyma). In 4 there was secondary hemorrhage, the source of which was not specified; in 1 the hemorrhage is termed intrarenal.

COMPLICATED CASES.

Laceration of the peritoneum or intraperitoneal organs is the most fatal complication of ruptured kidney. Death is due in the larger number of such cases to intraperitoneal hemorrhage, as is seen by the following figures: The total number of cases with these complications was 62; the total number of deaths was 48. Of these 48, intraperitoneal hemorrhage caused death in 36, or a little more than 66% of the deaths in this class of cases.

Altogether, therefore, 61 of the entire number of 190 deaths which occurred in both complicated and uncomplicated cases were due to hemorrhage.

SUPPURATION.

Twenty-five of the 112 deaths of the 486 uncomplicated cases were due to suppuration, as follows: Perinephritic abscess, 21; septic infection and abscess, 1; pyonephrosis, 2; suppurative nephritis, 1; total, 25.

ANURIA.

Anuria caused death in ten of the series, in which but one kidney was injured, and the other was normal. In several others death resulted from laceration of both kidneys, and in four there was but one kidney. Anuria occurred in the latter and in some of the former, but was not the immediate cause of death, shock or hemorrhage being the more direct agents in this respect.

Anuria of twenty-four or forty-eight hours' duration was present in several cases, which ended in recovery, or in which the renal function was restored before death resulted from some other cause. Butler records an instance of anuria lasting thirteen days before the patient died; the other kidney was atrophied, and the ureter of the injured one obstructed by a mass of débris.

Morris quotes an example of intermittent anuria reported by Cerou which was, he thinks, explained

by the formation of an aneurism of a large branch of the renal artery within the capsule of the kidney.

When of short duration, and recovery takes place, anuria is to be referred, so far as we can judge, to reflex inhibitory action upon the other kidney, because of injury to its mate, the latter's function being temporarily suppressed by the traumatism, or by injury to its pelvis or ureter, or by obstruction of the latter by clot or débris. If of longer duration than 36 or 48 hours, anuria is generally of grave significance.

PERITONITIS.

There were nine deaths referable to peritonitis in the *uncomplicated* cases, and five in those having *injuries of the abdominal organs associated* with that of the kidney.

Numerous experiments have been made with animals, and a considerable number of clinical observations are also available for the purpose of determining the effect of the presence of urine, or urine and blood, in the peritoneal cavity. Quervain [4] has written one of the most recent and useful articles upon this subject, in the course of which he summarizes the opinions and observations of a number of different writers, some of which are of interest in this connection.

Quervain quotes the following authors as holding the opinion that except for such aid as can be derived from surgical intervention, all patients into whose peritoneal cavity urine and blood are extravasated die of septic peritonitis — Küster, König, Albarran, Schede, Petroff, Edler. Grawitz, on the other hand, as far back as 1888, asserted that the danger from laceration of the peritoneum in cases of subcutaneous rupture of the kidney was owing to the free exit afforded for the blood into the peritoneal cavity, and denied that the presence of urine there was necessarily of serious consequence.

Tuffier had already demonstrated by experiments on animals that no urine flows from the surfaces of lacerated renal wounds, and that in order to have urinary extravasation in such circumstances the renal pelvis, or one of the calyces, must stand in communication with the renal surface through the wound. Also from another series of observations that the introduction of urine into the peritoneal cavity, provided it was made gradually once, or even repeatedly, if only intervals of sufficient length were made between the different introductions, did not cause peritonitis, whereas if the flow was continuous, the contrary was the case.

Israel and Grawitz found that urine which flowed into the peritoneal cavity from a divided ureter in the case of dogs did not kill them sooner than four or five weeks.

Quervain's experiments in the same direction yielded similar results, and showed further that the peritoneum very quickly protected itself from the encroachments of the extravasated fluids, by formation of adhesions. When these failed, steady flow of urine into the peritoneal cavity usually resulted in peritonitis.

TREATMENT.

An important influence upon the mortality being exercised by the method of treatment adopted, the following analysis with reference to this aspect of the subject has been made as a basis for comparison of the various methods and for the study of such other details as are of importance and interest before considering the special features of the treatment.

The largest series of cases hitherto published is that of Delbet of 320. When comparing methods of treatment he divided them into three classes: (1) Cases treated expectantly. (2) Cases treated by operations other than nephrectomy. (3) Cases treated by nephrectomy.

For the sake of convenience the writer has adopted the same classification, but has carried the analysis of the whole number of the series, including Delbet's cases, further than was done by him.

The author has studied the details of all the cases included in this analysis, so far as the reports of them permit, has let the figures tell their own story for what it is worth, and has not changed or transferred any of the data, or made any suppositions of what would probably have shown different results from those which appear, had something happened other than that which did actually occur. Moreover he does not think that a statistical compilation such as that which is about to be presented forms a sufficient basis for making final conclusions, and that the exercise of sound surgical sense, in dealing with individual cases, is more valuable than what may or may not be shown in a general way by the figures of such a statistical calculation, even though it be made with more than twice the number of data hitherto gathered together for purposes of analysis.

ANALYSIS OF CASES WITH REFERENCE TO TREATMENT, CAUSES OF DEATH, ETC.

	Cases.	*Deaths.*
Total number available for this purpose	603	191, or 31%
Total number without associated injuries	487	113, or 23%
Total number with associated injuries	116	78, or 67%
	603	191

The 487 uncomplicated cases classified with reference to method of treatment are as follows:

	Cases.	*Deaths.*	*Mort'ty.*
Treated expectantly	273	81	27%
Treated by operations other than nephrectomy	99	7	7%
Treated by nephrectomy	115	25	25%
	487	113	

UNCOMPLICATED CASES TREATED EXPECTANTLY.

Causes of death in 56 of the 81 fatal cases treated expectantly.

Perinephritic abscess	17
Pyonephrosis	1
Hemorrhage (hematuria in 8, perirenal in 7; in 3 of the latter the renal vessels were torn)	15
Anuria	10
Peritonitis	5
Shock	4
Uremia (absence of other kidney in two of them)	4
	56

Of the 25 other deaths the cause is not stated.

[4] Deutsche Zeitschr. f. Chir., vol. 62, 1901-02, p. 58.

NINETY-NINE UNCOMPLICATED CASES TREATED BY OPERATIONS OTHER THAN NEPHRECTOMY.

Treated by lumbar incision, tampon and drainage.	*Cases.*		*Deaths.*		*Mort'ty.*
Pereinephritic abcess	21		1		
Perirenal hemorrhage	20		2		
Hydronephrosis	12		0		
	53	53	3	3	
Cases treated by aspiration.					
Perinephritic abcess. (Death from peritonitis in 1 case.)	7		1		
Pyonephrosis	1				
Hydronephrosis	6				
	14	14	1	1	
Cases treated by lumbar nephrotomy.					
Intrarenal hemorrhage or suppuration. (The two fatal cases had the other kidney injured also.)	11	11	2	2	
Laceration and hemorrhage.					
Treated by laparotomy and drainage	11	11	1	1	
Treated by lumbar incision and suture of the renal wound	8	8	0	0	
Treated by partial nephrectomy	2	2	0	0	
Totals,	99			7	7%

COMPLICATED CASES TREATED EXPECTANTLY.

Total number, 56; deaths, 51; mortality, 91%.

Conditions and causes of death in 46 fatal cases.

Anuria (absence of one kidney, 2; both kidneys injured, 2)	9
Injury to lung or other pulmonary complications	8
Dislocation of the neck	1
Fractures (3 of skull, 5 multiple)	8
Rupture of bladder	1
	27

Intraperitoneal.

Associated injuries, 24; deaths, 24; mortality, 100%.

Intraperitoneal hemorrhage through torn peritoneum	9
Laceration of liver (shock and hemorrhage)	5
" " spleen (shock and hemorrhage)	6
" " small intestine (peritonitis)	2
" " mesocolon (peritonitis)	1
" " mesentery (hemorrhage)	1
	24
Total,	51

COMPLICATED CASES TREATED BY OPERATIONS OTHER THAN NEPHRECTOMY.

	Cases.	*Deaths.*	*Mort'ty.*
Laceration of the peritoneum	5	3	
Three treated by lumbar incision and drainage, 1 of these three died from hemorrhage.			
Two treated by laparotomy, tampon and drainage, and both of them died, one from peritonitis, one from hemorrhage.			
Laceration of liver and peritoneum	4	1	
Three treated by laparotomy, tampon and drainage, one of these died from hemorrhage.			
One treated by laparotomy, suture of liver, tampon of renal wound and drainage. This patient lived.			
Laceration of spleen and peritoneum	4	2	
Two were treated by laparotomy and splenectomy, the kidney not being touched. Both recovered.			
Two treated by laparotomy and tamponing the spleen. Both died, one from hemorrhage, one from peritonitis.			
Laceration of mesentery	1	1	
Treated by laparotomy, ligation of injured vessels of mesentery, tampon of kidney. Death from peritonitis.			
Contusion of descending colon	1	0	
Treated by suture of the injured bowel.	15	7	46%

ANALYSIS OF CASES TREATED BY NEPHRECTOMY.

	Cases.	*Deaths.*	*Mortality.*
Total number	160	44	27.5—
Uncomplicated cases	115	25	21—
Complicated cases	45	19	42—
Lumbar nephrectomies	81	22	27—
Abdominal "	44	14	30—

Lumbar nephrectomies.

	Cases.	*Deaths.*	*Mortality.*
Primary uncomplicated	42	12	30—
Secondary uncomplicated	22	3	14—

Causes of death in the 12 fatal cases of primary uncomplicated lumbar operation:

Hemorrhage and shock in 10, peritonitis in 1, infection and sepsis in 1, (the renal vessels were torn in 3 of the 10 fatal cases from hemorrhage.)

Causes of death in the 3 fatal cases of secondary uncomplicated lumbar operation:

One from shock attending operation; 2 from sepsis.

	Cases.	*Deaths.*	*Mortality.*
Primary lumbar complicated	5	3	
Secondary lumbar complicated	6	4	
	11	7	

Causes of death in the 3 fatal primary operations:

The peritoneum was torn in all of the 3 fatal cases. In one of them the intestine, which was adherent to the peritoneum overlying the kidney, was torn. Gangrene and septic peritonitis were the causes of death in this case. In the other two the peritoneum was torn also, and intraperitoneal hemorrhage and shock caused death.

Death in the 4 fatal secondary operations was due to:

Peritonitis in 2; in both the peritoneum was torn. In 2 to sepsis, 1 following suppuration in the form of subphrenic abscess and purulent pleurisy, and 1 perinephritic suppuration of long duration.

ABDOMINAL NEPHRECTOMIES.

	Cases.	*Deaths.*	*Mort'ty.*
Total number	44	14	30%
Uncomplicated	11	2	18%
Complicated	33	12	36%

	Cases.	*Deaths.*
Primary uncomplicated	6	1 (hemorr'ge and shock)
Second'y uncomplicated	5	1 (peritonitis)

	Cases.	*Deaths.*
Primary complicated	30	10
Secondary complicated	3	2
	33	12

Causes of death in the 10 primary complicated cases were as follows: Hemorrhage from ruptured spleen in 2, intraperitoneal hemorrhage from the kidney in 3, hemorrhage from liver and spleen in 1, shock attending splenectomy and nephrectomy in 2, peritonitis in 1, pneumonia in 1.

Causes of death in the 2 fatal secondary operations were: Hemorrhage and shock attending resection of intestine and nephrectomy in 1, shock and anuria — both kidneys being injured — in 1.

(To be continued.)

A CASE OF ACUTE EPIDIDYMITIS IN AN UNDESCENDED TESTICLE, WITH GONOCOCCI DEMONSTRATED IN THE EXCISED ORGAN.

BY FRED T. MURPHY, M.D., BOSTON.

From the Clinico-Pathological Laboratory of the Massachusetts General Hospital.

AN acute inflammation in an undescended testicle demanding operation is not remarkable. The demonstration of gonococci in the organ thus removed is unique, so far as I can learn.

Since 1892, when Eraud [1] published his observations on the etiology of acute epididymitis, and concluded that the toxin obtained by him from a micro-organism cultivated from the urethra was the cause, the bacteriology has been much discussed. Soon after this publication d'Arlhac [2] substantiated these conclusions by growths on culture media and animal experiments. He isolated this diplococcus, similar in size and staining properties to the gonococcus, but growing freely on ordinary culture media, and called it the orchicoccus. Eraud and Hugounenq [3] were able to prove to their own satisfaction that the orchicoccus was distinct from the gonococcus, that it was the cause of epididymitis, but that it might be present in the urethra without exciting such an inflammation. Somewhat later Carpentier [4] recognized this special organism as an active irritant in epididymitis, and Rollet [5] believed it to be the sole cause of the inflammation. While these observers uniformly found the growth on culture media to differ from the gonococcus, yet their conclusions have not been received without question, and the orchicoccus as described has not been accepted as a definite organism. Based on the large number of negative and the small number of positive results, a theory of irritation from a gonococcus toxin was advanced, but it lacks experimental proof. When the difficulty of cultivation of the gonococcus is considered, these negative results are not noteworthy. As is illustrated by the case of Collan,[6] the immediate negative report from cover-glass preparations may prevent further investigation. Here a swelling of the epididymis was aspirated, but only serous fluid withdrawn, which was negative in the stained specimen, but on proper culture media gave an abundant growth of pure gonococci. Also the slight tendency of the gonococcus to cause frank suppuration is well recognized, and without an abscess, or some rare complication, as in the case to be reported, the opportunities of obtaining material for examination are few. Organisms other than the gonococcus have been isolated from an abscess of the epididymis by Jadassohn,[7] staphylococcus, and Macaigne and Vauverts,[8] Friedländer's bacillus; so that the possibility of a mixed infection cannot be denied. With our present acceptance of the gonococcus, however, as the cause of acute urethritis, and the not uncommon association of the epididymis with unusual irritation, as in irrigation of the posterior urethra or massage of the seminal vesicles, the probability of its being the etiological factor must be allowed. The increasing number of cases in which the gonococcus has been demonstrated also confirms the opinion that it is the specific organism of acute epididymitis, though inflammation with trauma, circulatory disturbances, as was held by Porosz,[9] and a mixed infection are possible causes. Routier,[10] in July, 1895, reported gonococci in the pus from an abscess of the epididymis, but gave no data other than a microscopic examination of a Gram decolorizing diplococcus. Grosz,[11] in November, 1897, gave the first complete report of a positive growth of gonococci obtained from the pus from an abscess of the epididymis. His observations were complete and the growth on cultures was positive. In the next month Collan reported the case cited above, in which only serous fluid was aspirated from a swelling of the epididymis. Since that time cases have been reported with careful examinations of culture growths by Harttung,[12] Colombi,[13] Witte,[14] Reach,[15] Pizzini [16] and Karwowski.[17] All cultures were obtained from isolated abscesses in the epididymis except in the case of Colombi, which in addition had a general infection. Laurent [18] notes a case in which the gonococcus was identified by form and color reaction from smears from the epididymis, but no cultures were made.

The case which I have to present entered the Massachusetts General Hospital on August 9, 1901, on the service of Dr. S. J. Mixter. He was seen by Dr. G. W. W. Brewster, and I have these gentlemen to thank for the opportunity of operating on and reporting the case.

J. B., twenty years old: single; clerk. On the afternoon of August 9, patient was admitted to the accident room with the diagnosis of strangulated inguinal hernia.

Previous history unimportant except that the left testicle had never been in the scrotum, and five weeks before he had contracted his first gonorrhea. Treatment had been by internal remedies, and for some days the urethral discharge had been practically absent. No acute symptoms until the morning of the day before entrance, when he noticed a small lump in the left groin which was exceedingly tender and painful. During the last twenty-four hours pain and tenderness increased. Bowels moved on the morning of the 9th. No vomiting. Examination showed a fairly developed and nourished man, who seemed moderately sick. Temperature, 102.4; pulse, 108; respiration, 26; white count, 18,000; heart, no murmurs; pulse, of fair strength; lungs, negative; belly, soft, not distended; right testicle in the scrotum and of normal size; left testicle absent; penis free from scars; no urethral discharge could be expressed. In either groin were slightly enlarged glands. On the left side just above Poupart's ligament and external to the external ring was a tender tumor, the size of the end of the first finger, over which the skin was reddened. It was apparently distinct from the chain of glands, dull on percussion, and gave no impulse on cough. The external inguinal ring was plugged with a mass which seemed to extend on the external oblique fascia to the tumor. Right inguinal canal normal.

Diagnosis made of acute inflammation of an undescended testicle, and the patient sent to the ward with an ice bag on the groin. In the ward he seemed to grow more acutely sick and suffered great pain. No vomiting, and belly unchanged. At 8 P.M. the temperature had risen to 104.2 and the pulse was of poorer quality. Operation was

advised, and the patient consented to the loss of the testicle if necessary.

Operation with general anesthesia. The incision was made over the tumor as for hernia. Carrying the dissection through the skin, the subcutaneous tissue was found very edematous. Lying on the external oblique fascia about one cm. outside of the ring was what appeared to be a small testis. An enlarged and porky cord extended from this, and at the external ring was acutely flexed. The testicle was atrophied to such an extent and the cord so short that no attempt to replace it in the scrotum was made. The external oblique fascia was split to the internal ring. Then the indurated cord was tied off as high as possible with catgut and the fascia caught together with interrupted stitches of the same material, a small gauze drain being left in the inguinal canal. Skin closed in the usual way. Dry dressing. After the operation the patient had a very comfortable night, and by morning the temperature had dropped to normal, with the disappearance of all symptoms. The wick was removed on the second day, and the wound healed practically by first intention. Patient was discharged on the eighteenth day.

The specimen removed at operation was examined by Dr. James H. Wright of the clinico-pathological laboratory of the hospital, and his report is as follows:

The specimen sent for examination consists of an epididymis without any apparent testicular substance. It is surrounded by what appears to be a thickened tunica vaginalis. Perhaps 1.5 cm. of spermatic cord is present. On longitudinal sections made through the epididymis, the interstitial tissue appears to be increased in amount and the color of the cut surface is dark red with a number of grayish walled tubules showing, which are filled with a yellowish semi-solid material or with thick opaque white fluid.

Microscopical examination of cover-glass preparations from the material in the tubules, stained by Gram's method and afterwards with Bismarck brown, shows a small number of brown-stained diplococci, like gonococci in size and shape, situated both within and outside of the pus cells, which are numerous. In cultures on hydrocele agar from the contents of the tubules above described there developed a variable number of colonies, grayish white and pearly in appearance, and of rounded outline, the larger of which attained a diameter of about 2 mm. after about forty-eight hours in the incubater. These were composed of Gram decolorizing diplococci, sometimes appearing as tetrads and resembling gonococci. Further study of these cocci in subcultures resulted as follows: They do not grow upon plain agar (reaction + 1.7). In one tube, upon which a considerable quantity of material was sown, two or three colonies developed, but several other plain agar tubes inoculated parallel with the hydrocele agar cultures showed no growth after forty-eight hours. The colonies on the hydrocele agar appear as rounded, translucent, pearly disks attaining the diameter of about 2 mm. in some instances.

On dry hydrocele agar the growth has a viscid consistency, stringing out when touched with a platinum needle. Under a low magnifying power the colonies appear as translucent disks with smooth, rounded outlines, showing in their central portions small brownish granular masses irregularly distributed. The coccus decolorizes by Gram, and shows a tendency to grow in the form of tetrads. In a culture about forty-eight hours old the cocci show marked involution forms and degeneration. The organism in this case is clearly the gonococcus.

Microscopical examination of hardened sections taken from different places in the specimen shows the larger tubules to be filled with pus, while some of the smaller tubules are not so affected. The epithelium of the tubules containing pus is for the most part absent, and there is in some instances purulent infiltration and degeneration of the surrounding tissue. In some tubules diplococci like gonococci are present inside the pus cells. The interstitial issue shows marked infiltration with fibrin, and moderate infiltration with leucocytes and other inflammatory cells.

The blood vessels are dilated and gorged with red blood cells.

In cross section of the spermatic cord, the lumen of the vas deferens contains pus and the epithelium lining it is absent and disintegrated. In the pus, diplococci like gonococci are observed in small numbers. There is some infiltration of the substance of the cord with inflammatory cells together with fibrin. No proper testicular substance is apparent in the sections.

We have to do, then, with a case of epididymitis without abscess formation, the usual clinical condition. The gonococcus clearly was the infecting agent in this case, and it seems to me that the only reasonable ground to take is that it is the micro-organism concerned in all cases of epididymitis with gonorrheal urethritis, possibly rarely associated with a mixed infection. Why the smaller tubules were not generally involved it is hard to explain unless they represent more distant portions of the vasa efferentia beyond the limits of the process. This specimen must, I think, add materially to the evidence that epididymitis is due to the presence of the gonococcus in the epididymis, and is not due to the absorption of toxin from the urethra or to the primary infection of other micro-organisms. Clinically the differentiation from the other possibilities of acute inflammation, as adenitis, incarcerated or partially strangulated hernia, is not without interest.

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THE NERNST LAMP FOR THE PRODUCTION OF ETHER WAVES FOR USE IN THERAPEUTICS.

BY WILLIAM ROLLINS, BOSTON.

ETHER waves from two forms of electric lamps are now used extensively in therapeutics in Europe and to a less extent in America. Where short ether waves are required the arc is the more suitable, as the temperature is higher, making the proportion of short waves greater; and having no glass covering like the incandescent lamp there is no absorption from this source. Glass absorbs practically all the

waves shorter than 300 uu., as does the atmosphere those given out by the sun. During the past year I have made experiments with Prof. Walter Nernst's lamp, in which a rod containing a preparation of zirconia is heated by an electric current. This like the arc requires no glass covering, though it is supplied with one. Loss of short waves is therefore avoided. The light is well suited for use in therapeutic cabinets in which an even distribution of radiant energy is desired and obtained by using many incandescent bulbs — over ninety in one of Dr. Kellogg's. A second advantage over incandescent bulbs is that the consumption of current for the same number of light waves is greater, less of the current being converted into the longer heat waves. I do not expect the Nernst lamp will supersede the older forms for therapeutic purposes, but it is certain to have a place of its own. Ether waves are now so much used in medicine that it seems desirable to have some general term under which all the forms, such as x-light, ultra violet light, actinic light, ordinary white light, red light, heat and electric waves, can be grouped. I am in the habit of using the term "ether therapeutics" for this purpose, and suggest it to others as a broad though definite term.

Clinical Department.

A CASE OF MALIGNANT ENDOCARDITIS WITH MENINGITIS, PNEUMOCOCCUS INFECTION.

BY L. C. MILLER, M. D., WORCESTER, MASS.

In spite of Broadbent's protest against the use of the term "malignant," as applied to endocarditis instead of "infective," I have preferred it in this case for the reason that it illustrates the fact that malignant endocarditis is usually fatal.

REPORT OF CASE.

Mrs. W., sixty-one years old, widow, hospital matron.

Family history. — Father killed in accident; mother died of consumption; brother of Bright's disease.

Previous history. — She has had more or less articular rheumatism for years. Last spring she had what was called "grippe," accompanied by a nasal discharge. She never permitted an examination of the nose, but Dr. Getchell, from her description of the symptoms, considered that she had disease of either the frontal or ethmoidal sinuses, probably the frontal.

During the above illness a soft systolic murmur was found at the apex of the heart, and a mitral lesion diagnosed.

Recently she has complained of trouble in her head. Some time (a week or two) before her present illness she fell on the ice and struck her head a severe blow. At about the same time, whether before or after it is impossible to determine, she had an attack of dizziness, followed by confusion of mind resembling aphasia. This lasted five or six hours. About four weeks before death she nearly fainted in church.

Present illness. — Feb. 6, about midnight, she had a severe chill, with nausea and retching but no vomiting. The remainder of the night she had chills or chilly sensations. The next morning she felt some nausea. The temperature was not taken.

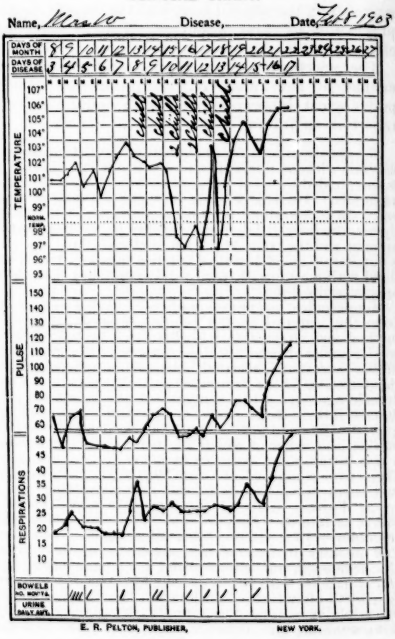
For three days she remained in bed without improvement.

I saw her first Feb. 9. She complained of a cough and of some mental confusion (feeling stupid, and not being able to finish a sentence). She did not complain of pain or refer her illness to any particular part of her body.

She seemed cheerful, laughed and joked as was her wont, but was evidently anxious about herself. She looked whiter than usual.

Physical examination. — The joints of her hands were much enlarged and thickened. Her pulse was 70', full and regular; the radial arteries slightly atheromatous. (Her pulse was normally from 50' to 55'.) Respiration 20', regular and easy.

CLINICAL CHART.



Chest, lungs. — The right side was negative. On left side, below, especially behind, there was a slight dullness with slightly diminished respiratory sounds.

Heart. — The apex beat was felt in the fifth interspace in the mammary line. Percussion showed no enlargement of the cardiac area. There was a soft systolic murmur, most marked at the apex, much less so at the base. Accentuation of the pulmonic second sound was doubtful. The aortic second sound was more accentuated than the patient's age would account for. The systolic mur-

mur was easily heard in the axilla and behind near the angle of the scapula.

Abdomen. — The spleen was not felt. There were no unusual symptoms found in the abdomen. Its walls were very thick and made the palpation of the liver and spleen practically impossible.

There was no edema anywhere. The pupils were equal and responded to light.

The urine examination of the previous day showed: Urine strongly acid; specific gravity, 1.030; albumin trace; sugar 0; urea 3.8%; sediment, a few brown granular casts, a few red blood corpuscles, a moderate number of leucocytes, amorphous urates.

In all, eight examinations of the urine were made. The highest specific gravity was 1.030, lowest 1.018. Only a faint trace of albumin was ever found. The urea never over 3.8%, the lowest being 1.9%. In the sediment were always hyaline casts, leucocytes, uric acid crystals, and epithelium; sometimes granular casts; once a waxy cast.

The blood count showed 15,000 leucocytes at the first count and 16,000 at the second count.

No diagnosis was made after this examination.

The bowels were sluggish, but responded to a compound cathartic pill. Strychnia and small doses of whiskey were ordered. The stomach symptoms had quieted down and milk with plain soda was advised.

The next day, the fifth day of the sickness, the patient seemed much the same. The left lung seemed duller on percussion and the respiratory sounds more diminished. The temperature had fallen to 99.8° in the morning, but went up to 101° by mid-afternoon. The pulse was 54′ and 50′. The respirations 22′ and 20′.

The sixth day of the illness the patient showed more anxiety about herself. She complained that she could not finish a sentence and felt stupid. The highest temperature was 101.8°, the lowest 99.2°; pulse, highest 54′, lowest 50′. The bowels moved after a compound cathartic pill. Examination of the chest showed less dullness and clearer respiratory sounds, and by the eighth day the lungs were negative.

The eighth day she had a chill lasting ten minutes. The temperature went from 98.6° to 103.2°; pulse 80′, respirations 40′.

Without going too much into details, it is sufficient to state that the patient had eight chills in the six succeeding days. The highest temperature was 103.8°, pulse 80′, respiration 40′. The tenth day we were certain of marked changes in the heart sounds. These had come on so gradually that it was difficult to detect them. The systolic murmur at the apex was rougher and much louder, especially toward the axilla. The sounds were muffled over the base. Three days later we could detect a soft diastolic murmur over the base. The pulse was still regular but with a bounding quality and more easily compressed.

The night of the tenth day she was delirious. Some of the time she perspired very freely.

That day we ventured the diagnosis of malignant endocarditis. Previously we had been expecting pneumonia to develop. But the symptoms of the latter if they existed were very indistinct and soon cleared up.

The eleventh day of her illness there was a purulent discharge from her left ear. This ceased in two days, when the drum was incised without further discharge. At this time she complained of feeling dizzy, but never of pain.

The fourteenth day she was delirious and gradually became unconscious. Urine was passed involuntarily.

During the afternoon of the fourteenth day Drs. Gage and Baker saw the patient in consultation. At the time of the consultation Mrs. W. was unconscious, breathing regularly, pulse regular but bounding. There was no dyspnea, no edema of the legs, or signs of edema of the lungs. The heart sounds were as described above.

After considering all the possible causes for the patient's condition, Drs. Baker and Gage expressed it as their opinion that she was suffering from some septic condition in the brain, probably abscess, possibly meningitis.

Between 6 and 8 o'clock, P.M., of that day her respirations were of the Cheyne Stokes type with some cyanosis. The house officer, Dr. von Sholly, discovered a left-sided hemiplegia affecting the limbs and face but not the eye.

The next day the right side became paralyzed. She died the seventeenth day after the initial chill.

Résumé. — We have a woman past sixty; her family history negative. She has a rheumatic history and an old valvular heart lesion. There are recent evidences of either circulatory or brain disturbance, perhaps both. The onset of her last illness was marked by a chill and gastric disturbance, with a slight dullness and diminished respiratory sounds on one side. These symptoms were followed by a variable temperature for a few days, then by chills every day until unconsciousness came.

There was a marked leucocytosis; moderate renal changes; no diminution in the excretion of urea. There was increasing loss of mental power up to unconsciousness and paralysis. There was marked roughening of the heart sounds after a week's illness. The pulse was full and regular. There was no edema of the extremities or lungs, or other signs of cardiac incompetence.

DR. BAKER'S REPORT OF THE AUTOPSY.

Autopsy held at 4.30 o'clock, Feb. 22, 1903, — two hours after death. The body was that of a large, well-developed, well-nourished woman, 5 feet 11 inches in height; estimated weight, 185 pounds.

There was the usual postmortem mottling in dependent parts, but no rigor mortis. The pupils were equal and dilated about 7 mm. There was no edema. About each phalangeal joint there was marked bony and cartilaginous thickening, with some distortion of the fingers, evidently due to chronic rheumatoid arthritis.

Head. — The scalp showed nothing unusual, but the entire bony skull was found to be at least twice the average thickness, with marked thickening externally of the squamous portions of both temporal bones.

Interior of skull. — There were very extensive exostoses almost like ivory in character. They were situated nearly symmetrically, arising from the

petrous portion of the temporal bone extending into the middle fossæ.

Brain. — There was found a most extensive, yellowish-gray thick exudate in the pia mater, so extensive as to conceal the convolutions of the brain over nearly the entire surface of the convexity of the right hemisphere, and the upper two thirds of the convexity of the left hemisphere. The pia over the base was markedly injected and edematous, and somewhat hazy.

The main arterial trunks showed a moderate degree of atheroma.

The ventricles of the brain were not remarkable. On sectioning the brain no areas of softening were found.

Lungs. — The right lung was completely covered with old adhesions, completely obliterating the pleural cavity. There was also a very slight recent pleurisy about this lung. The lung itself was less elastic than normal, but there were no areas of consolidation. The left lung was fully expanded without adhesions. There were no areas of consolidation in this lung. The pleural cavity contained no excess of fluid.

Pericardium. — The pericardium was free from adhesions, except to the right lung. The sac contained about 30 cc. of a clear serous fluid.

Heart. — The heart weighed 400 gms. There was marked hypertrophy and dilatation of the left auricle, with marked hypertrophy of the wall of the left ventricle, which was nearly twice the normal thickness. The right auricle was not remarkable. The right ventricle was slightly hypertrophied but not dilated. The mitral orifice was somewhat contracted, with the anterior segment of the valve thickened. There was in it a small abscess containing about five drops of a thick yellowish-white pus. Adjacent to this was a large, irregularly shaped dark red thrombus, about the size of the end of a thumb. This was firmly adherent to the valve and projected into the auricle. The aortic valve was of normal appearance; but there was a slight degree of atheroma of the aorta itself just above the valve. The tricuspid and aortic valves showed no changes. The heart muscle showed a very faint degree of cloudy swelling.

Abdomen. — The stomach and intestines were normal. The spleen was about twice the normal size, with its lower half the seat of a recent hemorrhagic infarct. The remaining portion was soft and swollen. The left kidney was lobulate, firm and at least twice the normal size. Its capsule was thickened and adherent, leaving on removal a red granular surface. There were several small cysts scattered over the surface. On section the cortex was irregular in thickness, though measuring more than normal. The right kidney was lobulated, firm and of about one half the normal size. It was similar in structure to the left. The pelvis of the kidneys, ureters and bladder showed no special changes.

The liver was somewhat more fibrous than normal, without other changes.

The uterus was of the infantile type, about two inches in length, nearly round and about three quarters of an inch in diameter. (She had never menstruated.) Both ovaries were exceedingly small and apparently undeveloped, as were the Fallopian tubes.

ANATOMICAL DIAGNOSIS.

Malignant endocarditis of the mitral valve. Mitral stenosis and regurgitation. Hypertrophy of the left and right ventricles and hypertrophy and dilatation of the left auricle. Acute suppurative leptomeningitis.

Chronic interstitial nephritis, chronic fibrous pleuritis, acute splenic tumor with infarct. Infantile uterus. Thickening of skull. Rheumatoid arthritis of hands.

BACTERIOLOGICAL DIAGNOSIS.

Smear preparations from the brain showed numerous pneumococci, and a pure culture of pneumococcus was obtained from a culture on blood serum. Smears from the abscess in the mitral valve showed the same organisms. Sections of a portion of the mitral valve showed pneumococci.

I shall not attempt to discuss this case in detail, but speak only of a few of its most interesting features. Perhaps the first question that comes to mind is the source of the infection. There were no signs of recent pneumonia found at the autopsy, and we know that, aside from the doubtful respiratory symptoms, there were no other clinical symptoms of pneumonia. The middle ear as a source of infection was ruled out by the autopsy. The frontal or ethmoidal sinuses were not opened, so it cannot be definitely said that they were not diseased. Judging by the great thickening of the skull, it seems quite probable that one or both of them may have been completely filled up.

Cases of endocarditis with pneumococcus infection but without pneumonia, with and without meningitis, have been reported.

In an etiological table of meningitis Osler gives as a cause of primary meningitis, pneumococci — the meninges alone involved or in a general pneumococcic infection — or secondary meningitis due to pneumonia, endocarditis, etc., from pneumococcus infection.

Weichselbaum,[1] in 1888, reported two cases of malignant endocarditis without pneumonia either preceding or accompanying them; one with and the other without meningitis.

The one complicated by meningitis so nearly resembled my case that I consider it worth quoting:

"There was admitted to the hospital a man of thirty-seven years, who two years before had articular rheumatism, since which time he had suffered from heart palpitation. At the apex of the heart systolic and diastolic murmurs were found. During his illness the patient ran a high temperature, and had, besides, two chills. Twelve days after entrance to the hospital the man died.

"The autopsy showed a fibrino-purulent cerebrospinal meningitis; also an insufficiency of the mitral valve with considerable polypoid vegetations on the valve, an eccentric hypertrophy of the left and dilatation of the right heart ventricles. There was an infarct of the spleen. *Pneumonia* was not present. Pneumococci in the exudate of the meninges, as well as in the valve deposit."

[1] Wien. med. Wchnschr., 1888, Bd. xxxviii, S. 1177 and 1209.

In order to complete his investigations into the part the pneumococci played in this case, Weichselbaum, using a pure culture of these pneumococci, injected them into a guinea pig whose aortic valve had been injured artificially. After two days the pig died. The autopsy in this case showed an endocarditis, but not on the aortic valve which had been injured, but on the mitral valve. In addition there was a bilateral pleuro-pneumonia and a greatly swollen spleen. From the heart, spleen and lungs of the pig, cultures showed pneumococci.

Weichselbaum, in discussing these cases, says: "It must be determined which process was primary, the endocarditis or the meningitis. Since such a differentiation cannot be made with certainty, so nothing definite can be said about the point of entrance of the diplococcus pneumoniæ in the case described. This applies as well to the other case in which, besides the endocarditis, there was no process whatever to be found caused by the diplococcus pneumoniæ. The possibility of the endocarditis in this case arising by way of the respiratory tract cannot be shown offhand."

These last remarks apply to my case. It cannot be shown how the infection entered, nor exactly its course after entry. I have assumed that it extended from the heart to the brain. It may be objected to my opinion that Mrs. W. showed symptoms of cerebral disease of some sort before the onset of the acute illness. In reply I can only say that we do not know how long the malignant endocarditis may have existed prior to our discovery of it. Gibson[2] says: "This septicemic form of acute endocarditis is sometimes specially characterized by the cerebral symptoms to which Osler has particularly called attention; it is then frequently associated with meningitis, and it may be noted that Netter has detected pneumococci in the meningeal exudation. It cannot be too strongly insisted upon that a great many cases of the affection run a perfectly latent course, and only reveal themselves by a sudden disturbance of the circulatory system, through changes taking place in the heart or embolic processes occurring in other organs."

If for no other reason, this case is interesting because symptoms which were, at the best, but vaguely and partially understood were wholly explained by the pathological and bacteriological findings.

I am under obligations to Dr. F. H. Baker for a careful autopsy report; to Dr. Anna von Sholly for assistance and suggestions in the conduct of the case; to Dr. Merrick Lincoln for German translations.

Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BROOKLINE, MASS.

THE SIMPLE DEMENTED FORM OF DEMENTIA PRECOX.

DIEM[1], after a careful study of nineteen cases, concludes that, beside the clinical types of hebephrenia, katatonia, dementia paranoides and paranoid forms, which all end in the peculiar mental weakness of dementia precox, there is another type which leads to the same terminal condition, the same disturbance of intelligence and character, but its beginning is regularly simple, insidious and without special forebodings; it develops without acute exacerbations or remissions, without pronounced maniacal or melancholy states, without hallucinations and delusions, and without the peculiarities characteristic of the other forms of dementia precox above mentioned, catalepsy, tics, affectations, peculiar manners, stereotyped attitudes, negativeism and mutism. After some years there is usually a stationary condition. The type is best described by the name of the simple demented form of dementia precox or simple dementia. Pure cases are not very common, although they are much commoner than is supposed, because they often come very late to asylums. Twelve of the nineteen cases lacked all the specific symptoms of hebephrenia. A sharp definition, however, cannot be made and must be only artificial. Variations in the emotional state, katatonic symptoms, and delusions may at first be unnoticed, and yet be transitions to the forms already described. Women suffering from this form are often considered of bad character, and men simply as alcoholic. One symptom of dementia precox has seldom been described, but is specially common in these cases, namely, a fine regular tremor of the hands. It is usually impossible in the early stages to predict the definite course of the disease, and after a number of years the simple demented form may pass into the hebephrenic form. Simple dementia, hebephrenia katatonia and the paranoid forms of dementia precox thus form one clinical unity. This form is of great practical and forensic importance on account of its close relations to alcoholism, vagabondism and acquired anomalies of character.

PSEUDO-HALLUCINATIONS.

Lugaro[2] believes that there are many insane patients who apparently have hallucinations, yet merely have subjective impressions as of words pronounced mentally, and not actually false hearing. These pseudo-hallucinations or psychical hallucinations consist in pure representations without the objective character of true hallucinations. They consist in mental voices or the mental representations of acts. They assume a character extraneous to the person's personality by the method by which they arise, by their separation from the ordinary processes of association, by their unusual and strange character, and by the contrast which they may present to the patient's own desires. They are always interpreted by the patient as an exceptional phenomenon with explanatory delusions, which vary according to the patient's education or tendencies. The phenomenon of epigastric voices is determined by these hallucinations accompanied by abnormal sensations in the internal organs, which determine the localization of the voices. Many of the cases described as pure verbal psychomotor hallucinations are really due to these pseudo-hallucinations associated with peculiar sensations

[2] Diseases of Heart and Aorta, page 416.

[1] Archiv f. Psychiatrie, XXXVII, III, 1903.

[2] Rivista de Patologia Nerv. & Ment., VIII, 1, 72, Jan., Feb., 1903.

in the speech apparatus. The phenomena of thinking aloud and of forced speech may also be due to these pseudo-hallucinations. Certain imperative actions are also usually associated with them, and they all probably depend upon the same causal factor, — an irritation in the brain acting independently of the ordinary mechanism of association. True hallucinations probably have their seat in the sensory centers, and pseudo-hallucinations in the centers of association. They are characteristic of chronic mental states, or at least are more striking in them, and are especially common in dementia paranoides, but they may be observed in every form of dementia precox. They are also seen less frequently in psychoses of the climacteric period, or of old age, and sometimes in general paralysis. The characteristic mental disturbance of dementia precox consists in a disturbance of elaboration of motives for actions of the will and of conduct. All the affective disorders and the disturbance of conduct of such patients are due to this disturbance — the affective insensibility, the motiveless emotions, the impulses, the negativism, katatonia, catalepsy, echoing of words and acts, stereotyped movements and peculiar mannerisms. The pseudo-hallucinations are probably an immediate associative effect of such a disturbance. It is probable that this fundamental disturbance depends upon an elective systemic lesion of special cortical neurones. The system involved cannot be either sensory or motor, because the sensibility and the motor power are intact. It cannot be a system designed for the association of images, because memory and ideation are preserved. It must therefore involve a system of neurones destined for the highest co-ordination between representatives, the corresponding emotions and the execution of acts. From his studies of the structure of the cortex and the findings in patients presenting these phenomena, Lugaro suspects that the diseased system may be contained in the deep layer of the cortex and in the polymorphous cells.

DEMENTIA.

Probst[3] reports a case of dementia due to special changes in the cortex. The patient came of a healthy family, and had had no previous diseases or injury, although for six years she had taken considerable alcohol. At the age of twenty-one she began to be negligent and forgetful, confused and despondent. After three years she became restless, excited, irritable and at times violent, and slept poorly. This condition increased for two years, the patient becoming much demented, filthy and maniacal, caring nothing for her family or friends. This condition lasted to the end of her life, a period of eleven years. Four years before her death she had epileptic seizures, and later there was considerable hesitancy of speech and tremor of the hands. At the autopsy the left hemisphere was found much larger, extending beyond the median line, and the convolutions on the right side were small and atrophied. This atrophy was very great and sharply defined. It involved the right upper frontal convolution, the upper part of both right central convolutions, the extremity of the right temporal lobe, the orbital part of the first frontal convolution, the whole temporal lobe with the operculum and insula, the right supra-marginal convolution, the right gyrus fornicatus, the left upper frontal convolution, the orbital part of the first left frontal convolution, the left operculum and insula, and the left first temporal convolution. The atrophy of the cortex was, therefore, circumscribed and limited to the convolutions mentioned. The other convolutions were normal. The white matter beneath the convolutions was also much atrophied in places and showed secondary degeneration. There were no signs of inflammation or of obstruction of the circulation, but the process was apparently a primary destruction of the layer of the ganglion cells and later of the white substance. The disease came on slowly, and was first manifest in a brief period of confusion followed by three years of depression, negativism, and defective intelligence. This was followed by a maniacal stage, which lasted until the end. The hearing was not materially affected, but speech was limited to brief remarks, which were often repeated.

[3] Archiv. f. Psychiatrie, xxxvi, F. 62, 1903.

POLYNEURITIC PSYCHOSIS.

Meyer and Raecke[4] question whether this special psychosis described by Korsakow is limited to one definite cause, or whether it may occur under different conditions. Of late years it has been described as following infectious diseases of various sorts and also injuries, brain tumors, as one form of senile insanity, and from various poisons, although by far the commonest and most important cause is chronic alcoholism. The characteristics are the loss of the power of attention, disorientation, disturbances of memory and quiet confabulation. Hallucinations are not especially common. In the cases which they report there was often no neuritis. The first case had had delirium tremens, but showed no sign of neuritis or chronic alcoholism. There was great defect in appreciation of time and place; the memory for the past was good, but for later years, bad. The attention was much disturbed, and he had hallucinations of memory and confabulation. The second case was also alcoholic, and had had delirium tremens, but no neuritis. He had no memory for recent events, a tendency to romance, increasing mental weakness, and was untidy. The third case was also alcoholic, had no symptoms of neuritis, was dioriented, had hallucinations of memory, confabulation, disturbance of attention. The fourth case had a questionable neuritis, was much confused, had great failure of memory, especially for recent events. He was also anxious, and had grand ideas, delusions of persecution, and was somewhat depressed. The fifth case had had delirium tremens, disturbances in the pupils, disorientation, great loss of memory, and a tendency to romance. He had no epileptic attacks; there was cloudiness and thickening of the pia and atrophy of the convolutions with changes characteristic of general paralysis. The sixth case had had attacks of dizziness and convulsions in child-bed, with a complete loss of orientation for place and time and of memory for recent events. Alcohol was denied. The autopsy showed nothing remarkable, but suggested the early stages of general paralysis. In two other cases similar symptoms developed with apoplexy and a tumor of

[4] Archiv f. Psychiatrie, xxxvii, 1, 1903.

the brain. They believe, therefore, that the condition may appear in almost all the deep-seated organic lesions of the central nervous system, and almost always points to an irreparable injury. Other cases show that is not a disease of itself, and above all that it is by no means due exclusively to alcohol, but it may occur in general paralysis and in those diseases which cause severe and irreparable changes in the central nervous system.

PERIODIC INSANITY.

Neisser[5] calls attention to the fact that organic disease of the brain may give rise to periodical insanity, and cites the case of a woman of fifty-one who had an apoplectic attack with disturbance of speech and hemiplegia. The hemiplegia partly recovered, but within a year and a half she became very much depressed, and was sent to an asylum. Later she became tranquil, then much excited. In the interval certain residual delusions were detected dependent upon uncorrected impressions and defective recollections of the excited period. These periods of depression and excitement recurred, the periods of excitement being ushered in by spontaneous movements in the affected arm. He also calls attention to the fact that periodical insanity may not infrequently develop in patients who have had an attack of hemiplegia in childhood. In other cases where the prognosis is more favorable, a periodic insanity may develop after injury. He calls attention, furthermore, to one symptom of considerable importance, namely, that the pupils in patients between the attacks are abnormally dilated.

ACUTE CONFUSIONAL INSANITY.

Camia[6] has made a study of the pathological changes in fourteen cases of acute confusional insanity. He has also reviewed seven other cases which he has previously reported, and has reviewed the findings in fifty-three reported cases. He concludes that all the lesions met with in acute confusional insanity, except those due to complications or to changes which may be interpreted as etiological factors, are of an acute type, and due to a state of intoxication. Some present slight alterations of the chromatic substance of the cells in different parts of the nervous system, slight fatty degeneration of the cells of the liver and kidneys and sometimes a slight increase of nuclei in the walls of the vessels. These must be regarded as the minimal lesions attributable to the morbid process causing a mental disease, and common to all. Delirium tremens does not differ in any essential or characteristic trait from the ordinary syndrome of grave mental confusion, but the hallucinations of sight and the motor phenomena, especially the tremor, are more constant and more severe. We are not yet able to recognize the origin of the toxic substances which give rise to these conditions, and we are not justified in assuming a diminished resistance of the nervous system in such individuals, as the hereditary influence is often slight. There must, further, be some other factor still unknown, in regard to which we cannot yet make any hypothesis. In alcoholism we may suppose that the intoxication causes special alterations or organic change, which undergo great variations in different individuals, and thus be of a different nature in different individuals and produce different results. The same holds true in regard to the psychoses developing during convalescence from infectious diseases, and for the true febrile delirium. We must admit the existence of some intermediate factor to explain why certain cases run their course without any mental symptoms, and other cases develop severe mental symptoms in individuals who show no special indication of a diminished resistance of the nervous system. This factor may consist of a special virulence of the micro-organism, or changes in the organic chemistry from unknown causes. Other cases develop without any evident cause. In these we may argue whether some slight cause still obscure may produce the grave disturbance of the complex processes of the organic chemical changes. Camia recalls the opinion of Phillippen, that shock is nothing but an intoxication due to chemical alterations produced by the nervous system. The pathological anatomy does not explain the pathogenesis of many cases of acute confusional insanity. Among the factors which favor the development of such insanity, there is one which is adapted to the greater number and perhaps to all the cases even of a different origin. This factor consists in a special alteration of the chemical processes which may depend upon causes of a varied nature.

EPILEPTIC MANIA.

Heilbronner[7] believes that the flight of ideas is occasionally met with in acute epileptic psychoses, contrary to the opinion advanced by Kraeplin and his school; and cites a case with repeated attacks, the first being anxious excitement with great confusion and jactitation; in the second attack there was euphoria, the flight of ideas; the third attack was the same, except there was no disorientation, and the speech was in the main mere repetition. In some of the attacks the memory was retained, in others it was absent. In some of the attacks, furthermore, a depressed period followed the excitement. So he questions whether there may not be a combination of epilepsy with some other functional psychosis, and he believes that conditions may occur as an epileptic psychosis which cannot at first be distinguished from mania, and which especially may show very markedly the symptoms of the flight of ideas. He criticises the theories advanced by Kraeplin, and does not believe that any individual symptom may be regarded as typical or confirmatory of any definite idea that the flight of ideas may be pathognomonic of any special acute condition, but that it may be a symptom of various forms of mental disease.

THE MENTAL CONDITION IN APHASIA.

The question to be determined is how far organic aphasia, on account of the alteration of internal speech, determines mental enfeeblement, tending more or less to dementia. Vigoureux[8] reviews the various opinions that have been held; for example, that of Trousseau, who thought that in aphasics there was intellectual impairment; that of Charcot and Ballet, who considered that this impairment varied with the type of mind affected, that is, according

[5] Archiv f. Psychiatrie, xxxvi, 144, 1902.
[6] Rivista di Patologia nerv. e ment., vii, 289, July, 1902.
[7] Monatsschr. f. Psychiatrie, xiii, 193, 269, March, April, 1903.
[8] Vigoureux: Rev. de Psychiat., Jan., 1902.

as the individual condition is visual, auditory, etc. The appreciation of the intellectual ability is often a difficulty. There are a number of observations, for instance, in which sensorial aphasia with paraphasia may simulate dementia. Charpentier believes that among old chronic patients in asylums with apparent incoherence are a certain number of cases of paraphasia not understanding what they say, but well knowing what they wish to say.

The general conclusion of the author, after a study of the question, is that, while it is clear that a certain number of aphasic patients have been in full possession of their intellectual faculties in spite of their disorders of speech, yet the majority show intellectual enfeeblement and easily become demented.

POLYCLONUS IN GENERAL PARALYSIS.

Lambranzi[9] reports a case of typical general paralysis in a man of fifty-one, which began two years before his admission to the asylum with muscular spasms in the muscles of the lower limbs, especially of the thighs, and most marked in the flexor muscles. These twitchings came on at short intervals, and were sometimes so severe as to flex the thighs on the body and the legs on the thighs. Not long after, some weakness of the mental faculties was noticed; but he was able to continue in business for nearly a year, when other signs of general paralysis appeared. The muscular spasms were thus the first, and for a long time the sole, indication of severe brain disease.

ACUTE GENERAL PARALYSIS.

Buchholz[10] regards as acute general paralysis only those cases in which a previous healthy person was suddenly attacked with an acute form of the disease, and excludes the cases of acute manifestations in a person in whom the disease had begun in the ordinary manner. Out of 326 men paretics admitted to the Marburg asylum in twenty-five years, only 24 died within the first year, and of these 9 died of some intercurrent disease. Of the 15 remaining cases, in 9 the disease ran its course rapidly, but differed from the ordinary cases only in the brevity. In 2 other cases the disease ran its ordinary course, and then suddenly ended in a stage of great excitement. In the remaining 4 the symptoms resembled those of acute delirium, though some symptoms and the pathological appearances showed the true nature of the disease. Out of 50 women admitted during the same period 6 died in the first year, but only 1 from the disease itself. There are thus only 5 cases of the true acute galloping type. Clinically he distinguishes two forms,—the acute general paralysis, in which 11 of these cases might be classed, where the course is much shorter and rather more violent than ordinary general paralysis; and the galloping type, in which the short prodromal stage is followed by symptoms resembling those of acute delirium. The autopsies in these galloping types showed decided congestion of the cerebral vessels and also sub-acute and acute processes in the spinal cord. In one case it was believed that the chronic disease had received impetus and had been rendered acute by a course of mercurial inunction.

[9] Rivista di Patologia nervosa e mentale, vii, 360, Aug., 1902.
[10] Archiv f. Psychiatie, xxxvi, 427, 1902.

THE SENSE OF SMELL IN GENERAL PARALYSIS.

It has long been known that there is a tendency to loss of the sense of smell in general paralytics. A. Voisin, indeed, regarded this as one of the earliest signs, and therefore of diagnostic value.

Toulouse and Vaschide[11] find that complete loss of smell does not tend to appear at a very early stage (contrary to Voisin's opinion), and that it increases progressively with the course of the disease. Of the twenty-eight subjects, eight, or about one third, were absolutely anosmic, or quite without sense of smell, while among normal subjects only one in thirteen is found to be in this condition. None of the anosmic individuals belonged to those in the early stage of the disease.

It was noted that perception is lost much sooner than sensation, that is to say, that while the subject was vaguely conscious of some olfactory sensation when the camphor was applied, and could distinguish it from water, she was often unable to recognize the nature of the odor, even at an early stage of the disease. It is interesting to remark, the authors observe, that in a disease which is the very type of dementia, of intellectual weakness, the most delicate form of mental activity, perception, should be the first to go.

THE PATHOLOGY OF GENERAL PARALYSIS.

Fürstner[12] agrees in the main with Mendel that the classical form of the disease is becoming less common and that the type characterized by a simple progressive dementia is becoming more common. The disease is probably on the increase, although the statistics of asylums are not wholly trustworthy. He questions furthermore whether there is actually an increase of the disease in childhood. The duration of the disease seems to be shorter, about one half of his cases dying in the course of the second year. In 97 autopsies he found great atrophy only 9 times, hematoma only 6 times, and hydrocephalus 20 times. These gross changes seem much less frequent at the present time than in the autopsies formerly reported. This difference may be due to the prevalence of the demented form of the disease, and he recommends that especial attention be made to the postmortem findings in cases which have been carefully studied clinically. He believes that lesions found to-day are not sufficient to explain the more pronounced symptoms of the classical form of the disease. If the cases with a short initial period of excitement followed by a simple progressive dementia are regarded as belonging to the demented form, this form is much more common. He thinks that the term "tabo" paralysis should be limited to the cases presenting the typical symptoms of tabes, and these cases are decidedly in the minority. Pathologically he has found changes limited to the posterior columns in only 12% of the cases. In the majority of cases changes are found in both the lateral and posterior columns. He recommends that the term "pseudo-paralysis" be limited to the cases which at first show the symptoms of general paralysis, and later get

[11] Review de Psych., Feb., 1902.
[12] Monatsschr. f. Psychiatie, xii, 409, Nov., 1902.

well. He cites eight cases which showed an hereditary predisposition combined with mental and physical overwork and sexual excess, and which began with a period of excitement with exalted ideas, tremor of the facial muscles, unequal pupils, exaggerated knee jerks and some aphasia. All have recovered and have remained well for a number of years — from seven to eleven. Such cases can be explained only on the ground that the morbid changes in the brain cells disappear, and the cells recover their normal function.

THE BLOOD OF THE INSANE.

Ceni and Pini [13] have made another attempt to determine whether the blood of the insane has any special toxic power. From 200 to 250 cc. of blood was taken from the patient's arm, and allowed to coagulate for twenty-four hours. The serum was then collected and injected into the peritoneal cavity of guinea pigs. The blood from two normal individuals and eighty-one insane persons was employed. In the first series of tests, three tests were made injecting 2½, 5 and 10 cc. respectively. In the second series the dose was increased, injecting 5, 10 and 20 cc. As a result of these injections they conclude that it is impossible, notwithstanding the large number of experiments, to establish by this method any definite differences of a general nature between the toxic power of the blood serum of normal individuals and that of the insane. The greatest number of cases with a hypertoxic serum were found in melancholia, epilepsy and phrenasthenia. The toxic power of the blood serum of individuals affected with different forms of insanity did not present any constant variations worthy of note, nor were these noted in different phases of quiet and excitement in one and the same morbid form. The phenomena of the individual reaction of the animals are so frequent as to disturb the accuracy of the results. By the method employed it was found impossible to control the phenomena of hypotoxicity of the serum found by other observers in melancholia, dementia and in epileptics between the attacks.

ASSISTANCE AND FAMILY CARE OF THE INSANE IN ITALY.

Tamburini [14] notes the increasing number of the insane in Italy, which has trebled in a little more than twenty years. This has naturally led to a great overcrowding of all the asylums in Italy. Of nearly 37,000 insane now registered in Italy, he believes that nearly a third — about 10,000 — could be cared for in some other way than by treatment in an asylum. This great increase in the number of the insane has necessarily led to a very much greater increase in the cost of providing for them, the cost in the provinces of Rome and Florence amounting to a million liras annually. As a relief for this it has been proposed to limit the admission of certain classes of insane, to establish special institutions for certain classes, such as epileptics, alcoholics and the pellagrous, and the development of family care. In 1898 about 1,400 insane were cared for in private families, either in their own families or in other families, in both cases with assistance from the state. The method of domestic custody in the patient's own family has many disadvantages. It may, however, be permitted in certain cases where the director of the asylum is convinced that the family environment is really proper for the good physical and moral treatment of the patients, and when the patients thus entrusted to the family remain under the careful watch of the asylum by means of one or more medical visitors, who may inspect them frequently, and may control the physical and moral treatment of the patient.

The care in the family of strangers was introduced in July, 1897, and at first was not wholly successful, because the patients were boarded out without any regulation or oversight. This is a method to be absolutely condemned. Under proper oversight, however, and with proper selection of patients, the method has great advantages. Quiet chronic insane of the asylum are often desirous to be boarded out, and some prefer it to being with their own families. The families in the neighborhood of the asylums have now lost the distrust and suspicion of this form of assistance and recognize the convenience of it. There are an increasing number of requests for patients, even from people who have had no relations with the asylums. The experience of the last few years has shown the necessity of a prudent choice of patients to be boarded out, drawing them especially from the quiet, harmless, chronic insane, not excluding the forms of periodic, epileptic or hysterical insanity and the harmless paranoiac insane, and in some cases convalescents. A careful choice of the families should be made, the families of asylum attendants to be preferred who live not far from the asylum, and who offer guarantees of morality and trustworthiness, which are indispensable. Careful observation on the part of the government of the asylum is requisite. The colony and family care have both their advantages and their inconveniences, but both have their place. In Italy the best method to adopt is to entrust the patients to families in towns near the asylum under the oversight of asylum physicians. This system offers the advantage of being under the initiative of the director of the asylum, and will lead the way to what Tamburini regards as the ideal, — the care of insane in small asylums for the treatment of acute and dangerous cases, and in large farm colonies with family life for all the rest.

ARTERIAL DISEASE IN INSANITY.

In an analysis by Greenlees of the pathological findings in 232 insane patients, thickening of the walls or calcareous deposits, as found (*a*) in the main arteries of the body, and (*b*) in the cerebral arteries, were frequently noted conditions. Hypertrophy of the arterial muscular coat, and atheromatous deposit in the vessel, are conditions common to old age, even in the sane; but it is interesting to note that in general paralysis, and this in cases dying at a comparatively early age, one or other of these conditions was commonly found affecting not only the general arterial system, but also the cerebral arteries. While arterial disease was found in 20% of cases of "mania," it occurred in 60% of my cases of general paralysis; in the former disease it was only found in cases of long-standing disease, whereas the average duration of the latter disease is only about three years.

[13] Rivista Sperimentale di Freniatria, xxviii, 613, 1902.
[14] Ibid., 671, 1902.

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

TWENTY-FOURTH ANNUAL MEETING, WASHINGTON, D.C.

(Concluded from No. 1, page 20.)

DR. GEORGE H. MONKS of Boston read a paper entitled

INTESTINAL LOCALIZATION; A STUDY ON THE CADAVER FOR THE PURPOSE OF DETERMINING TO WHAT EXTENT THE VARIOUS PARTS OF THE SMALL INTESTINE MAY BE IDENTIFIED THROUGH AN ABDOMINAL WOUND,

and reported a series of investigations on forty cadavers. The small intestine and mesentery in twenty-four of these cadavers were examined in reference to such characteristics of the different parts as might be of use in assisting the surgeon to determine the *position* of any loop of intestine in reference to the rest of the tube; and also to ascertain the *direction* of the tube in the loop (that is to say, which end of the loop was nearest the duodenum and which the ileo-cecal valve). Tests were made through various abdominal incisions on sixteen other cadavers to determine with how small an error a loop could actually be localized. Of the 180 loops localized, the average error proved to be about two feet.

The attempt to ascertain the direction of the gut was made in ninety different loops on fifteen different cadavers, and in eight the direction proved to be wrong, while in 82, or 91%, it was right.

An intestinal loop was localized principally from the characteristics of the loop itself, or from those of the adjacent mesentery, or from the relation of the loop to the deeper parts of the mesentery. The direction was ascertained by reference to the mesenteric route, which is an infallible guide, although, on account of the twists in the mesentery, it was occasionally difficult to properly apply the test.

A number of diagrams were exhibited illustrating the characteristics of the different parts of the intestinal tube and of the mesentery, and the writer stated that he had, on a number of occasions, determined the position and direction of an intestinal loop on the living subject by this method with success, due allowance being made for the different conditions.

This paper was discussed by DRS. W. W. KEEN of Philadelphia, and GEORGE WOOLSEY of New York, and closed by the author.

DR. LOUIS A. LAGARDE, Washington, D. C., read a paper entitled

THE LESIONS THAT AUGMENT THE DEVELOPMENT OF TETANUS AND OTHER INFECTIONS IN GUNSHOT WOUNDS,

in which he expressed the opinion that the lesions would depend upon: (1) The sectional area of the bullet; (2) its velocity, and (3) the resistance encountered on its impact. The greater the sectional area or velocity of the bullet, the greater will be the lesion. Hematomata especially predispose to infection and increase the danger from tetanus, as is also the case when the wound is burned by powder, etc. He reviewed the observations of Dr. Lardy in the Greco-Turkish War, and also contrasted the lesions made by the various kinds of bullets. He referred to the experiments of Muller and Koller, on which they essayed various methods of treatment of the channel track in gunshot wounds caused by projectiles that were primarily infected, namely: (1) Controls, for which nothing was done; (2) those treated with a glass drain; (3) those treated with iodoform gauze drain; (4) those irrigated with 5% solution of carbolic acid; (5) those treated by rubbing with a cotton mop soaked in tincture of iodine; (6) those treated by cauterizing the wound. All the wounds were dressed with a clean sterile dressing, and the results showed that the animals treated by simple dressing did best of all, and that those treated by radical measures, such as swabbing with iodine and the application of the thermocautery, gave evidence of suppuration in every instance.

THURSDAY AFTERNOON.

DR. EMMET RIXFORD, San Francisco, Cal., read a paper entitled

NOTE ON THE OPERATIVE TREATMENT OF OLD UNREDUCED DISLOCATIONS OF THE ELBOW,

in which he remarked that the keynote to the situation was sounded by Stenson in a paper read before this association in 1891, in which he showed that the so-called fragments of bone which had frequently been observed within the joint, while unquestionably the chief obstacle to the reduction of the dislocation, were in a great majority of cases not fragments broken off the humerus or ulna by complicating fracture, but new growths of bone from stripped-up periosteum. He felt that, if the bone be reduced to its normal position shortly after the injury, which is nearly always possible, the function is practically in every case restored; but if allowed to remain displaced until this new bone has formed, manipulative reduction is impossible and should never be attempted if force is required. The reason that congenital dislocations treated by manipulative force recovered, he felt, was due to the fact that this new growth of bone had not formed, and also that the operation being done in children the joint would often recover from the traumatism.

He then reported cases in which he had employed the Kocher incision, but because of the difficulty in reducing the dislocation, and fear of loosening the periosteum, he had added the procedure of Trendenberg of section of the olecranon. He commented on the value of the x-ray as a diagnostic aid.

This paper was discussed by DRS. JOHN B. MURPHY of Chicago and A. H. FERGUSON of Chicago, and closed by the author.

DR. E. WYLLYS ANDREWS, Chicago, Ill., read a paper entitled

DROWNING OF PATIENTS IN FECAL VOMIT DURING OPERATIONS FOR INTESTINAL OBSTRUCTION AND SEPTIC PERITONITIS,

in which, after reporting two cases which had occurred in his own practice and referring to several cases that had happened in the practice of others,

he summed up as follows: (1) Flooding of the air passages by fecal vomit is a real danger, and probably has caused many unexplained deaths. (2) Resuscitation is impossible or very difficult. (3) The fluid may flow by gravity through the relaxed stomach sphincters directly out of the intestines, where it has accumulated in enormous quantities. (4) The accident occurs with great suddenness with a stomach supposedly empty. The suffocation may be so complete that no outcry is made and may not be noticed by the attendant. (5) It may occur as late as an hour after anesthesia, or at any time until consciousness is restored. (6) We have no evidence that it can occur during consciousness, even *in extremis*. (7) After septic laparotomy, patients when returned to bed should be watched, without even momentary intervals, to full consciousness. (8) A suggestion made to me by Dr. McArthur that as many as possible of such cases be operated upon under cocaine anesthesia seems to me sound in the light of the above report, as well as for other reasons. I have tried both spinal and local cocaine anesthesia in several recent cases, and am convinced that it is a life-saving measure.

This paper was discussed by DR. J. M. T. FINNEY of Baltimore.

THE PATHOLOGY AND TREATMENT OF TARDY POST-OPERATIVE INTESTINAL OBSTRUCTION, WITH A REPORT OF CASES

was the title of a paper read by DR. ELLSWORTH ELIOT, New York, in which he called attention to the fact that it is not a rare occurrence, being most frequently caused by paralysis of peristaltic action from a spreading or septic peritonitis; it occurs less frequently after a laparotomy from a nonpurulent condition, even although no infectious material has been introduced at the time of the operation. In this latter group of cases the obstruction is usually of a mechanical nature, and is due to the angular adhesion of one or more loops of intestine to the parietal peritoneum, to each other, or to the stump of some recently resected pedicle of omentum or ligated base of tumor, to a possible valvulus or to the protrusion of a coil of intestine through some accidental orifice in the mesentery or some other peritoneal structure. The symptoms indicating the obstruction develop shortly after the operation and before restoration of the intestinal function has taken place.

Careful exclusion of any kind of mechanical, thermal or chemical irritants from the contents of the abdomen during the primary observation should be observed. Ligatures should not be needlessly employed, drainage should be carefully managed and changed early with subsequent diminution in its amount, or if possible, its complete removal, while the actual treatment does not differ from the treatment of obstruction arising from any other cause. Several cases resulting from various causes, among them being two following operation for appendicitis, were reported.

This paper was discussed by DRS. JAMES E. MOORE of Minneapolis, J. F. BINNIE of Kansas City and A. J. OCHSNER of Chicago, and closed by the author.

DR. F. E. BUNTS, Cleveland, Ohio, read a paper entitled

NERVE INJURIES ABOUT THE SHOULDER JOINT,

in which he called attention to the distinguishing clinical nature of these injuries, which is a striking deformity resulting from the muscular atrophy, and the loss of function dependent upon the nerve injured and the muscle involved. He directed particular attention to: (1) Paralysis of the circumflex nerve; (2) paralysis of the long thoracic nerve, and (3) paralysis of the suprascapular nerve. He then gave in detail the symptoms produced by injuries to each of these nerves, giving a careful résumé of the literature on the subject, together with a tabulated report of cases showing the various diagnostic and prognostic points.

Under the head of general treatment and considerations, he stated that he had not referred to the individual treatment of these paralyses, as what applies to one is equally appropriate to all. The after-treatment in most cases has been the various anti-rheumatic preparations, and later electricity and massage. Where the cause is evidently a sudden traumatism, cold and rest are the most beneficial local measures during the acute stages.

He stated that he did not desire to advance any new or improved method of treatment, as the methods now in vogue have proven fairly satisfactory, so far as medical measures go, but that he had endeavored to point out in each case, as far as he was able, the synergistic action of other muscles which might, by careful and intelligent development, be so exaggerated or altered in their functions as to take the place of those which are totally or partially paralyzed.

DR. GEORGE WOOLSEY, New York, read a paper entitled

A CONTRIBUTION TO THE SURGERY OF CEREBRAL TUMORS,

in which he called attention to the fact that only a small proportion of all cerebral tumors were fit to be made the subject of radical operation, varying from 2 to 8%, according to various observers by the autopsy records, and averaging about 16%, judging from the records of those clinically diagnosed. He felt that this small percentage of operable cases depended largely upon our imperfect means of exact diagnosis and localization and on the inaccessibility of certain parts of the brain to surgical operation. In arriving at a diagnosis, we must consider, first, the general or pressure symptoms, and, second, the focal or localizing symptoms.

He then gave a careful résumé of the history of 101 cases reported by various authors during the past five years, and after going at some length into the diagnosis, prognosis and operative technique, concluded as follows: (1) The sphere of operation for cerebral tumors may be and has been extended to those parts of the cortex where the tumors are accessible and localizable, that is, to the prefrontal, parietal and occipital regions in addition to the motor area. (2) The prognosis, both immediate and remote, is as good, or even better, than in operations for malignant growths in some other locations. (3) This prognosis has improved with

the improvements in localization and operative technique, and with the limitations of radical operations to cases accurately localized. (4) The palliative operation is strongly indicated to relieve the symptoms where localization cannot be accurately made or the tumor cannot be removed. The exploratory operation is contraindicated. (5) Practically all circumscribed growths of moderate size are suitable for operation. (6) The osteoplastic method should be employed and the most rapid (and perfect) technique adopted which the circumstances allow.

This paper was discussed by DR. F. E. BUNTS of Cleveland, but not closed by the author.

DR. EDWARD MARTIN, Philadelphia, read a paper entitled

THE TREATMENT OF SURGICAL SHOCK BY ADRENALIN,

in which he referred to the experiments of Reichert, which have shown that adrenalin intravenously injected is a direct stimulant to the heart and to both the centric and peripheral vasomotor systems. He also notes that it is a stimulant to the respiratory center and that it increases general metabolism and body temperature. The brilliant experiments of Crile corroborate these findings, and would seem to point toward adrenalin as a potent medication in the treatment of shock or collapse. He also referred to the fact that in so far as the immediate lethal effects are concerned the drug is not markedly toxic, at least in the doses in which it would ordinarily be administered, since while .0005 dr. will markedly increase the blood pressure, this dose increased a hundredfold simply accentuates the increase, nor is there subsequently a compensating drop. He gave a full résumé of the experiments with this drug upon animals, and then followed a series of several clinical cases in which it had been used, one being a typhoid perforation and another a case of amputation at the hip joint required by osteomyelitis. He felt that the case of typhoid perforation spoke strongly in favor of the employment of this drug, as he stated he had never before seen a surgical patient so profoundly septic and collapsed make an operative recovery. He did not feel that the results of laboratory experiments should be taken as absolute indications of what the effect might be when employed on the human subject, and because of its power of lessening the bacteriolytic power of the blood of animals, he recommended that it be used in cases of infection in the human subject with caution until its exact effect has been demonstrated.

This paper was discussed by DR. EMMET RIXFORD of San Francisco.

DR. W. W. KEEN and DR. WM. M. SWEET reported the case of a boy of fifteen who on Oct. 24, 1902, was shot in the forehead. The bullet entered the right side of the forehead a half inch above the eyebrow and did not emerge. The wound was cleansed and a sliver of bullet removed from just above the wound of entrance. The left leg became entirely paralyzed, and on the day after the accident he had half a dozen severe epileptiform convulsions, but none since then. In the course of three months he was able to get about and when first seen by the authors, April 9, 1903, the only remnant of the injury was a slight weakness in the left leg.

Dr. Sweet made a skiagraph of the head and located the principal portion of the ball at a point 2.2 cm. to the right of the middle line and 1.5 cm. back of the fissure of Rolando and at a depth of 5 cm. from the top of the head. The position of the ball corresponded with Plate No. 15, of Dalton's Transverse Sections of the Brain, and measurements showed that the ball lay just above the right lateral ventricle. In addition to this large fragment, there were seven other minute fragments, the largest one being about the size of a medium-sized pin's head. These lay 2 to 3 cm. above a line running from the wound of entrance to the present position of the ball. The ball was not lying in the leg center.

The conclusion reached, therefore, both by reason of the finding of the fragment 2.5 cm. *above* the wound of entrance, the position of the smaller fragments *above* a direct line from the wound of entrance to the present position of the bullet, by the boy's statement that his head was only slightly bent at the time of the accident and by the injury of the leg center, that the ball went upward and backward, struck on the inside of the skull at a point corresponding to the leg center and was deflected downward and backward to its present location.

It was decided, therefore, that it would do more harm, at present, to attempt to remove the ball than to let it alone, but that if symptoms of an abscess or a single epileptic attack should follow, the ball should be removed at once.

Dr. Sweet described in detail his new modified apparatus for the exact location of such foreign bodies.

DR. W. JOSEPH HEARN of Philadelphia showed a skiagraph of a case in which operation was shown by Sweet's method to be advisable, and was performed successfully.

DR. EMMET RIXFORD of San Francisco discussed the paper, and DRS. W. J. MAYO of Rochester, Minn. and N. B. Carson of St. Louis briefly reported similar cases occurring in their own experience.

The following papers were read by title:

THE TOILETTE OF THE PERITONEUM AFTER OPERATIONS OF THE BILIARY PASSAGES. DR. EDWARD MARTIN, PHILADELPHIA.

AN UNUSUAL FORM OF SARCOMA OF THE TENDONS. DR. ROBERT F. WEIR, NEW YORK.

REMOVAL OF HEAVY SILK LIGATURE FROM AROUND THE PNEUMOGASTRIC NERVE. CLINICAL SYMPTOMS BEFORE AND AFTER REMOVAL. DR. CHARLES A. POWERS, DENVER.

The following officers are elected for the year 1903–1904: President, Dr. N. P. Dandridge, Cincinnati; Secretary, Dr. Dudley P. Allen, Cleveland; Treasurer, Dr. George R. Fowler, Brooklyn; Recorder, Dr. Richard N. Harte, Philadelphia.

The place of the next meeting, St. Louis, some time in May, 1904.

THE BOSTON
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SCIENTIFIC WORK IN PSYCHIATRY.

THE spirit of research which during the last century has pervaded all fields of human activity, and which has never been more active than in recent years, has exerted a potent influence on the institutions for the care of the insane throughout the world. From Pinel's day what had been virtually *prisons* began to become asylums. Forty years ago they began to change, owing largely to Griesinger's activity, from *asylums* to *hospitals*. This latter change was slow at first, but has advanced more and more rapidly, especially in the last decade. It has involved different conceptions and methods from those formerly in vogue — the inmates are becoming "patients," not "boarders;" their care-takers are becoming "nurses," not "keepers," and are more and more being trained in their duties; the medical staffs are increasing relatively to the number of patients; the patients are being more carefully observed and studied as to their mental and physical conditions; active treatment is being better directed to the improvement of these conditions; careful search for and scientific investigation of the causes underlying these conditions are being instituted; and instruction to students is being given.

In all countries there are still some asylums. The majority of institutions in this country have, however, at least begun to be hospitalized, while some have caught the real spirit and full significance of the movement. Their annual reports generally show pretty clearly their stage of progress. Some, with large capacity, small medical staff, relatively few admissions and discharges in proportion to the capacity, are hardly out of the asylum stage — their reports deal only with financial and administrative matters. Others have increased the relative size of the medical staff, established clinical laboratories and infirmary wards, train their nurses, and seek to give special care to recent cases. Their reports give, in addition to the financial and administrative data, statistics as to the number of autopsies, blood counts, urine analyses, sputum examinations and Widal tests, and other bacteriological examinations. Such institutions are becoming hospitals; and the work they do, while not advancing the bounds of our knowledge of insanity, yet indicates the growth of the hospital idea and the part these institutions are taking in it, and marks distinct progress towards a higher goal. A few institutions are in reality hospitals in the fullest sense of the term — places not only for the care and treatment of patients, but for the study of their conditions, the investigation of the causes of the conditions, and the spread of knowledge thus gained through instruction to students. This is notably true of the McLean Hospital at Waverley in this state, the annual report of which has recently appeared. The record of the work which it has undertaken and is carrying on and the methods employed in pursuance of this work invite comparison with the best of similar institutions in this or other countries. According to this record, the year just passed marks progress especially in the line of chemical investigation into the metabolic changes which may reasonably be considered to underlie the phenomena of many mental diseases. This work is the logical and normal development of a line of research conceived in the early 80's, begun in a small way with inadequate laboratory facilities and untrained workers in the late 80's, advanced during the following decade in enlarged laboratories but still by assistants not specially trained in the methods of physiological chemistry, but now, and for the last three years, being prosecuted in a thoroughly well-equipped laboratory by physiological chemists whose published papers have received recognition in the special journals and laboratories both in this country and abroad.

"Chemical laboratories" are shown in the plans of the buildings built within the last ten years in Germany in connection with the psycho-physical and pathological laboratories in the psychiatrical clinics, as at Giessen, Würzburg, Kiel, etc., but it does not appear that more is being done in them than the routine investigations involved in the ordinary thorough medical examination of patients. The attitude of the directors of these clinics is well expressed by Gaupp as late as January of this year. While recognizing that chemistry "may give us a certain insight into the relations between bodily and mental processes sooner than anatomy," he says, nevertheless, that it "is as yet unable to give us even a foundation" on which to work; we

must wait until "science understands fully the albumen bodies" and "all vitalistic questions have been once and forever done away with;" "only then can we satisfactorily begin to study the chemical processes in the organism." In other words, they do not yet see problems at which they can work in the present stage of development of physiological chemistry. England has held a broader conception of the possibilities of chemical investigation; as shown by the papers of Haliburton and Mott of London, published in 1899 and subsequently, on choline in conditions of nerve degeneration, and by the taking up under Mott's guidance of problems of pathological chemistry in these recent years at the Pathological Institute of the London County Asylums at Claybury.

Not only in the line of chemical research, organized and pursued for so many years with distinct purpose, but also in other lines of investigation, such as the clinical observation of mental and bodily states, the McLean Hospital is not behind the best of European institutions. Its methods of history and case-taking are thorough and adequate, gathering full data for present and future study. Its psychological laboratory, established in 1890, with a trained assistant, antedated Kræpelin's at Heidelberg by a year, though for some years before that Kræpelin had been seeking to adapt the methods of physiological psychology to the study of psychiatry. Clinical papers of value have been published by members of the hospital staff in journals and books of reference. The pathological-anatomical laboratory has contributed, through members of the staff, to the literature of lesions of the nervous system. Studies on the effects of certain modes of hydrotherapeutic treatment have been made and some of the results reported to medical societies, though not yet published. In the matter of treatment, besides other methods, new as well as old, the "bed-treatment," which is now being extensively discussed and introduced in foreign hospitals, has here been used in certain cases for many years. Since 1882 the nursing force has been trained, and the assignment of women nurses to the care of male patients has been made a prominent feature of the training-school system for twenty years. This practice is but newly attracting attention abroad, although for several years in a few hospitals the services of women in male wards have been used to a very limited extent.

We may well have a feeling of justifiable pride in an institution that takes such a leading position among others of its class. Its work not only reflects credit upon the community, but is productive of inestimable benefit, not only to the patients who are cared for in it, but to those also of other hospitals. For there is not wanting evidence that others profit by its leadership. But such work as is there being carried on must receive generous support if it is to be maintained, and therefore it not only imposes a duty on the community that benefits by it, but creates a great opportunity as well. It opens the way for an entirely new line of philanthropy — the endowment of research work in hospitals for the insane. The character and quality of the work already done at the McLean Hospital is guarantee of what it would be under the more favorable conditions of permanent endowment; the standing of its managers is guarantee of the faithful administration of such a trust. It is worthy in all ways to be the recipient and trustee of an adequate endowment. May it not have long to wait for such an increment to its power for good!

BOSTON ASSOCIATION FOR THE RELIEF AND CONTROL OF TUBERCULOSIS.

THERE has recently been organized in this city an association for the relief and control of tuberculosis, with the general object of demonstrating the prevalence of tuberculosis in Boston, and showing how it may be eradicated by intelligent effort. More in detail the object of this society is to make a careful study in this city of the relations between tuberculosis and the general conditions of life, also to extend as widely as possible knowledge regarding the communicability of tuberculosis by means of pamphlets, circulars and lectures, and to arouse general interest in procuring proper hospital treatment both for early and late cases, and for the care of the very poor as well as of those able to pay moderate fees. Finally it is intended to co-operate with various hospitals and dispensaries, where tuberculosis is under treatment, with the District Nursing Association, the Associated Charities and other organizations in caring by every possible means for indigent consumptives.

In the circular sent out by the association, it is stated that the work will be not only for the improvement of the condition of consumptives in Boston, but also for the permanent improvement of conditions in the community. It is estimated that about 1,200 deaths from consumption are annually reported to the Boston Board of Health, and that there are in the city in the neighborhood of 3,600 persons in various stages of the disease. It has been shown conclusively that many of these incipient cases, if given proper treatment in time, might be cured, and with this fact goes the hope that tuberculosis may ultimately be entirely eradicated.

Associations similar to this have been formed in America and Europe, and are already showing good cause for the support which has been given them. Naturally such work can only be carried on under a very considerable expense, and it is estimated that $5,000 is at once needed. The work is in the hands of physicians and others identified in the community with progressive ideas and work in connection with the general subject of tuberculosis as well as with other worthy objects. Under this leadership the public may be sure that the work will be well and conscientiously done, and that any contributions offered will be wisely expended. In general, as we have frequently said in these columns, we are in entire accord with any movement which will spread in an intelligent manner the fundamental facts regarding tuberculosis. Commonplace as these facts have become to the more enlightened portion of the community, it is plainly evident that there is still and long will be opportunity for active missionary work among the poor, and it is in this class that the disease gets its firmest foothold and is most difficult to eradicate.

We are glad to note in the circular which has been sent out that the work of the association by no means consists alone in influencing legislation or public opinion in the matter of increased hospital facilities for consumptives. What we need more than this at the present time is a general recognition of the fact that until the centers of infection can be wholly eradicated hope for the disappearance of the disease must be deferred.

THE REGENERATION OF SPINAL NERVE ROOTS.

We have previously commented editorially on an operation for trifacial neuralgia, suggested by Drs. C. H. Frazier and William G. Spiller of Philadelphia, consisting in a section of the nerve between the Gasserian ganglion and its entrance into the pons. The advantage of this operation was held to be that it was far less violent than destruction of the ganglion itself, and less liable to dangerous hemorrhage, and relatively simple of accomplishment. Its virtue, however, depended wholly upon the fact that the nerve roots were presumed not to have the power of regeneration.

To further substantiate this latter point, Spiller and Frazier have recently published in the University of Pennsylvania *Medical Bulletin* the results of an experimental study on the "Regeneration of Posterior Spinal Roots." The relative ease of operating on spinal roots, and the probable identity of the reactions in this and cranial nerves, led them to employ the spinal roots for their investigation. The operations, which were performed on dogs, were carried out with most careful aseptic precautions, and also the roots were divided in such a way as to make most favorable provision for subsequent reunion, if such reunion could occur. The general result of this investigation, the details of which we need not enter upon, was that there was no evidence in the case most favorable for observation, in which the animal lived ten months, of regeneration of these cut nerves.

This result naturally justifies the claim previously made by these observers, that a similar operation undertaken on the fifth nerve for the relief of pain should be permanent. As opposed to this view, there is a certain amount of evidence which goes to show that regeneration may occur in the intramedullary portion of severed posterior nerve roots. The evidence, however, remains somewhat inconclusive, and further experimentation must, no doubt, be undertaken before anything absolutely definite may be claimed. The fact remains, however, that Spiller's experiment, so far as it goes, is of positive value, and should encourage surgeons to resort to the operation to which we have alluded on the fifth nerve, certainly in cases where the extirpation of the Gasserian ganglion is for any reason contraindicated.

MEDICAL NOTES.

Mortality in Chicago. — According to the bulletin of the Chicago Health Department, the remarkably low mortality rate of the month continued during the week ending June 27. The 454 deaths reported — only three more than the week before — represent an annual rate of 12.54 per 1,000 of the department's conservative estimate of Chicago's midyear population, 1,885,000. For the twenty-seven days of the month the rate has been 12.70, as compared with 13.12 for June, 1902, and with an average of 14.12 for the ten Junes of 1893–1902 inclusive.

Swiss Medical Congress. — The Congress of Swiss Physicians was held at Lausanne in the early part of June. Anti-diphtheria serum, goiter and chronic articular rheumatism were among the subjects discussed.

Dr. Howard A. Kelly Honored. — Dr. Howard A. Kelly has recently been elected honorary president of the Glasgow Obstetrical and Gynecological Society. The subject of his presidential address, given in Glasgow, June 17, was, "The History of Appendicitis in Great Britain." The *British Medical Journal* comments upon it in the following words: "The address was interesting

and racy, and was evidently meant as a compliment to British physicians and surgeons. Needless to say, it was enthusiastically received."

RETIREMENT OF SIR FREDERICK TREVES. — It is reported that Sir Frederick Treves is about to retire from the practice of medicine. In the report to which we have access no reason is given for this retirement beyond his inclination to devote himself to other matters than medicine during the remainder of his life.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 8, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 37, scarlatina 24, typhoid fever 20, measles 31, smallpox 0.

CONDEMNATION OF SIASCONSET WATER SUPPLY. — It is reported that the State Board of Health, having examined the water at present used in the village of Siasconset, Nantucket, has reported that it is too polluted for drinking purposes without preliminary boiling. Last year typhoid fever, presumably due to the water supply, appeared in the village, but nevertheless effort to secure a public water supply has hitherto been unavailing.

SCARLET FEVER. — There has been a considerable epidemic of scarlet fever in Woburn, so that for a time the Board of Health saw fit to recommend suspension of public gatherings. Schools have been closed, and the question of closing churches was agitated. The type of disease has been mild.

THE BOSTON FLOATING HOSPITAL. — The Board of Managers of the Floating Hospital have announced the opening of the season of 1903 on Tuesday, July 7. Trips down the harbor will be made daily (weather permitting), except on Sundays, from July 7 to a date in September to be determined later. On Sundays, every night, and up to eight o'clock in the morning, patients will be admitted to the hospital at the station, Pickert's Wharf, New Street, East Boston, near North Ferry. The daily trips will be made from City Wharf, South Ferry, Eastern Avenue, the hospital leaving at 9.30 A.M., and returning about 4 P.M. Patients will be received at these hours. The age limit for patients is six years. The requirement for admission is a certificate signed by a physician, and these may be obtained from the Floating Hospital Office, 178 Devonshire Street, Room 505, from any of the dispensaries and hospitals in the city, and from physicians and agents of charity organizations in the city proper as well as in Greater Boston. Admission cards will be sent by mail on application. Co-operation is earnestly requested in the effort to exclude all contagious diseases from the hospital.

NEW YORK.

SUMMER CORPS OF BOARD OF HEALTH. — The summer corps of the Board of Health, organized for service in the tenement districts during the present season, commenced its work on June 29. This is somewhat earlier than usual, which is a distinct advantage, and will, no doubt, result in a greater saving of infant life. This year the corps consists of forty-three medical inspectors and seventeen trained nurses, a considerably larger number of nurses than last season. There are already entered at the health department the names of about twenty thousand infants and young children, and it is expected that before the summer is over there will be at least double this number.

JUNE MORTALITY. — The lowest mortality for the present year, and possibly for a number of years past, was recorded during the month of June. The health department reports show that this represented an annual death-rate of 16.54, against 18.51 for the month of May and 17.99 for June, 1902. Among the diseases presenting a decline in mortality were the following: The weekly average of deaths from pneumonia decreased from 149¾ in May to 84½ in June; the weekly average of deaths from broncho-pneumonia, from 62½ to 52¼; from acute bronchitis, from 36½ to 20½; from pulmonary tuberculosis, from 154½ to 139¼; from Bright's disease and nephritis, from 111½ to 93½; from organic heart disease, from 91½ to 87; from typhoid fever, from 9½ to 7½, and from influenza, from 4¾ to 1¼. During the last week in June, for the first time since early in the autumn, no death was reported from influenza. Almost the only affections in which there was an increase in mortality were the diarrheal diseases. The weekly average of deaths from these increased from 44¼ in May to 82¼ in June; and the weekly average from diarrheals in children under two years, from 44¼ to 82¼. Doubtless on account of the remarkable coolness of the weather during the month of June, this increase is smaller than usual for the season.

APPOINTMENT OF DR. R. M. PEARCE. — Dr. R. M. Pearce of Philadephia has been appointed as the successor of Dr. George Blumer in the faculty of the Albany Medical College, as adjunct professor of pathology and bacteriology, and director of the Bender Hygienic Laboratory. Dr. Pearce is to assume the position on Sept. 1, when Dr. Blumer retires, and his assistants will be Drs. E. McD. Stanton of New York and Charles K. Winne of Mount Wilson, Maryland.

APPROPRIATIONS. — At the meeting of the Board of Estimate and Apportionment on July 1 a number of important appropriations were made. Among these were $638,000 to acquire sites and construct public baths in Manhattan; $211,600 for two baths in the Greenpoint and Navy Yard sections of Brooklyn, and $155,000 for baths in the Bronx. This last is to be applied to the construction of three baths, one of which will be a permanent building for use throughout the year. At this meeting the board authorized the condemnation of additional land for the new Bellevue Hospital. This is to take in the block between First Avenue and the East River, which lies immediately north of the present hospital buildings. Issues of stock to the amount of $175,000 and $100,000, respectively, for the Zoological Park and the Botanical Gardens in the Bronx, were also authorized.

DEATHS AND BIRTHS IN 1903. — During the first six months of 1903, 34,855 deaths were reported in the city, representing an annual death-rate of 18.67, against 35,491 deaths in the first six months of 1902, with a death-rate of 19.54. The births reported numbered 46,408, against 40,392 for the first half of 1902.

HOSPITAL FOR CONVALESCENTS. — A new departure was made on July 1 by the department of public charities in opening a hospital for convalescent patients. The building used for the purpose is at the northern end of Blackwell's Island, and was formerly occupied by the Manhattan State Hospital for the Insane. It contains forty beds for men and thirty for women; and the number of these may be increased, with an increased demand, up to seventy-five for men and sixty for women. Patients will be allowed to remain for three weeks under ordinary circumstances, and for six weeks in exceptional instances.

STATE DEATH-RATE. — The monthly bulletin of the State Health Department, issued July 2, shows that the death-rate in the State declined from 16.8 in April to 16.1 in May. In the month of May pneumonia caused 1,084 deaths, a daily average of 35, against 40 in the first three months of the year. Influenza was credited with about 1,000 deaths, or 200 less than in April. Smallpox caused three deaths, all in Rochester, but no new cases had been reported there since May 25. At Elmira and Dansville cases of the disease were reported which originated from recently detected outbreaks in towns in Livingstone County, where smallpox has made considerable headway.

PRIZES FOR CLEAN TENEMENT HOUSES. — An interesting feature of the annual meeting of the East Side Janitors' Society at the Educational Alliance Building, on July 2, was the presentation of money prizes, medals or diplomas, for keeping their tenement houses clean, to 37 out of a total of 130 contestants. In making out the awards the points considered included each particular part of the premises. Mr. De Forest, president of the Tenement House Department, was one of the speakers on this occasion, and in the course of his remarks said that if the members of this association could be got to teach the other janitors of New York to do the same laudable things which they were endeavoring to accomplish, there would be no need of any tenement-house inspection.

TETANUS GERMS IN BLANK CARTRIDGES. — It is reported that tetanus germs have been discovered by Dr. Richard N. Connolly, bacteriologist of the health department of Newark, N. J., in blank cartridges offered for sale in that city. It is stated that Dr. H. C. Herold, president of the department, had suspected the existence of the bacilli in blank cartridges for some time, and that his suspicions were greatly strengthened by the reports of a recent outbreak of tetanus in Pittsburg, in which fifty cases are said to have followed a celebration in which firearms were used. He therefore called the attention of Dr. Connolly to the matter, and in consequence of the discovery by the bacteriologist a special meeting of the Board of Health was held on July 2 to adopt suitable measures to protect the community.

BURNING OF AN ISOLATION HOSPITAL. — The main building of a group erected in Orange, N. Y., at the time of the smallpox outbreak about two years ago, and used since then as an isolation hospital, was destroyed by fire on July 2, and it is believed that the fire was an incendiary one. Considerable difficulty was experienced in finding a location for the hospital, and in consequence of the objections of neighboring property holders the buildings were shortly to have been removed to the Orange poor-farm.

NOTES FROM THE PHILIPPINES.

MANILA EXHIBIT AT ST. LOUIS EXPOSITION. — The Board of Health of Manila is preparing to make an elaborate display at the St. Louis Exposition, and a committee consisting of Dr. E. L. Munson, U. S. A., assistant to the Commissioner of Health, Mr. A. Jadin, sanitary engineer, and Dr. Arlington Pond, medical inspector, has been appointed to prepare the exhibit. The sum of $1,000 has been appropriated to meet the expenses of the exhibit and 250 feet of wall space and 150 feet of floor space allotted for its display. The exhibit will be very complete, and is especially intended to show the good results attending the American con-

trol of sanitary matters in these islands. As far as possible in the photographic exhibit, conditions as they existed before and after the Americans took hold of affairs will be shown. The exhibit will show the results of an efficient sanitary administration, and will undoubtedly prove not only interesting but instructive to visiting sanitarians and others as illustrating the obstacles which it has been necessary to overcome.

The exhibit will include a complete file of all the publications, reports, circulars, blank forms and other printed matter issued by the Board of Health. There will be a number of maps and charts having to do with the distribution and prevalence of the most important diseases, and their prevalence among the different classes and races in the population of Manila. The photographic exhibit will include large photographs, more than one hundred in number, illustrating every phase of the work of the Board of Health in Manila. The subjects of streets, habitations, hospitals, drainage, sewerage, disposal of excreta, food and water supply will be fully illustrated, and special attention given to the subjects of cholera, plague and leprosy and the measures being taken for their prevention. Animal diseases and their prevention will be given much space. All in all, the exhibit will be very complete, and will probably compare most favorably with the showing made by other cities. It is felt that the situation and conditions here have not been fully understood, and the Board of Health proposes to show not only what has been accomplished, but the sanitary obstacles which have been overcome.

EXHIBIT FROM PATHOLOGICAL LABORATORY.— The Pathological Laboratory will also make an exhibit, which, though small, will be very instructive. Particular attention will be paid to the subjects of plague, cholera, leprosy, surra and the animal parasites of the Philippines. The laboratory has a wealth of pathological material, which it is proposed to work up as fully as possible, and exhibit in the form of gross and microscopical specimens, photographs, photomicrographs and tube and plate cultures. This exhibit should be of much value to those interested in the study of the diseases of the tropics.

CHOLERA.— In view of the development of a few cases of cholera daily in Manila, the health authorities have caused 30,000 circulars in Tagalog and 5,000 in Chinese, containing a few simple rules for the prevention of cholera, to be printed. One of these circulars will be posted with the sanitary card in every house in the city, and will also be placed in every casco, lorcha and other inhabited watercraft in the bay and river.

PREVALENCE OF CHOLERA. — Since the beginning of the year to May 25, there have been 242 cases of cholera in Manila, with 208 deaths, 7 recoveries and 27 cases under treatment. The disease has been practically confined to those whose occupations keep them along the waterfront, such as sailors, boatmen, fishermen, laundresses, etc. There is no question but that the Pasig and its esteros are infected, but it is a most difficult matter to prevent the natives from acquiring this infection. They bathe, wash their persons and utensils in the water, and probably in some cases use it to drink, in spite of every effort by the health authorities for the prevention of such practices. A considerable part of the population of Manila lives on boats, and at night-time it is practically impossible to prevent breaches of the sanitary regulations by this class. That a certain proportion of the cases of cholera occurring on these water craft are successfully concealed is evident from the considerable number of "floaters" dead from cholera which are removed from the river. A few cases of the disease seem to be traceable to the use of infected foods, but how this food question may be solved without bringing the low-class natives almost to the verge of starvation has not yet been apparent. All food offered for sale in the markets is carefully inspected, and any that is of doubtful character is rigorously condemned and destroyed; but it is not difficult to imagine how apparently good food may harbor the cholera germ and still pass muster with the inspector. A bacteriological examination of every article of food, or its disinfection, is quite out of the question, and all that can be done is to do the best possible under the circumstances. That the measures employed are reasonably efficient is shown by the fact that last year at this time there were fifty or seventy-five cases a day, while this year, with the same infection, there are probably not a half-dozen cases a day. Last year, however, a third of those attacked survived, while this year the disease has manifested a highly virulent character, and nearly all those who contract the disease seem to die in a few hours. Of the first couple of hundred cases during the present year, more than 90% died; of 54 consecutive cases 51 succumbed. The last week or so, however, the disease appears to have become milder in type. So far, the water supply of Manila has not become infected, and every possible precaution is being taken to prevent such contamination. Should the water supply become infected, the mortality in Manila, with the present virulent infection, would be very great.

THE PLAGUE SITUATION. — The plague situation at the present time shows very marked improvement. There were 17 cases in February, 42 in March, 52 in April, and only 24 up to May 27. This im-

provement is unquestionably due to the great activity of the health authorities in operating against plague; as in Hong Kong the plague has increased rapidly by leaps and bounds, and there were 117 cases in that city for the week ending May 16. In spite of the fact that Manila has a larger population than Hong Kong, and that the local conditions are here apparently more favorable to plague than in the latter city, Hong Kong has had about as many cases of plague in one week as Manila has had in three months. The plague mortality here has so far been 118 deaths out of 136 cases, with 9 recoveries and 9 cases remaining under treatment. The reduction in the number of plague cases is undoubtedly due to the stringent measures which are being enforced. Rats are being caught by the corps of rat catchers at the rate of about 12,000 a month, besides those poisoned, killed on the shipping and destroyed by property owners. Plague houses are carefully disinfected and repaired, or destroyed by fire. The most efficient measure of prevention is undoubtedly to be found, however, in the inoculation of every one of the 60,000 Chinese in the city with Shiga's plague prophylactic. This invention is being carried out systematically, house by house, street by street and district by district. All the Chinese are brought to the sanitary stations and inoculated, and this inoculation is repeated in ten days or two weeks. Those who are unable to call at the stations by reason of infirmity or illness are inoculated at their houses; such as choose, may employ private physicians approved by the Board of Health. Chinese women are inoculated at their homes by a trained female nurse. So far, there have been no untoward results whatever as a result of inoculation, and the local reaction is not sufficient to cause serious discomfort. That the measure is efficient is shown by the fact that no case of plague has occurred among the inoculated, while in a number of cases it has happened that the only uninoculated Chinaman in a large household has contracted the disease. The Chinese themselves see the efficiency of the process, and submit to it without opposition.

While the task of inoculation seems to be a mammoth undertaking, each sanitary station has a complete list of all the Chinese in its district, the location of their homes and data for identification. If a Chinaman leaves the district or takes up a new residence the health authorities must be notified. With such wholesale inoculation and rat catching the health authorities hope that the present year may see the last of the present infection in Manila. The proximity of China, however, implies special vigilance by the quarantine officials to prevent the importation of a new infection.

The Board of Health has also issued a plague circular in English, Spanish, Chinese and Tagalog, calling attention to the importance of rats as carriers of the plague infection, and the necessity of their destruction in combating the spread of the disease. All householders are urged to co-operate with the official rat catchers in the destruction of the rodents, and public notice given of the bounty to be paid for all rats delivered at Board of Health stations. The importance of sanitary surroundings and personal hygiene is also dwelt upon in the prevention of plague, together with the importance of early reporting cases of a suspicious nature to the Board of Health.

STATUS OF CHRISTIAN SCIENCE. — The attorney-general for the Philippine Islands has lately acted on a request from the Board of Health for information as to whether Christian Science healers could be prosecuted under the laws governing the practice of medicine in the Philippines. The law provides that those who "operate, prescribe, treat or advise" patients for a fee shall be regarded as engaging in medical practice, and restricts such practice to graduates of medicine who have passed the board of medical examiners, or who registered as practitioners of medicine prior to March, 1902. The attorney-general quotes extensively from the decisions in various states of the United States, relative to the status of Christian Science, which he regards as not finally determined. While the weight of evidence tends to permit the practice of Christian Science in the United States, the attorney-general states his personal belief that the practice of Christian Science constitutes the practice of medicine, and as such comes under the laws regulating the practice of medicine in the Philippines. He states, however, that this question is one for the courts to decide.

METEOROLOGICAL RECORD.

For the week ending June 27, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. . 21	29.74	54	56	51	100	97	98	N E	N E	18	18	R.	R.	2.36
M . 22	29.99	53	56	50	100	81	90	N E	E	16	8	R.	O.	.21
T. . 23	30.01	51	53	49	90	88	89	E	N E	16	18	O.	O.	.01
W . 24	30.06	52	54	49	90	96	93	N E	N E	13	12	O.	R.	.13
T. . 25	30.02	52	55	48	94	91	92	N E	N	9	4	O.	O.	.47
F. . 26	29.96	64	76	52	79	70	74	W	S W	9	8	C.	C.	O.
S. . 27	29.84	70	81	59	74	52	63	W	W	8	6	C.	C.	O.
☞	29.95		62	51			86							3.18

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 27, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Scarlet fever.
New York . .	3,785,156	1,216	468	29.60	12.74	4.03	9.95	1.31
Chicago . . .	1,988,270	454	133	27.08	10.57	2.86	6.40	1.32
Philadelphia	1,378,527	466	163	34.33	7.08	2.15	9.44	.63
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	176	77	36.46	8.05	—	18.18	.57
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	—	—	—	—	—	—	—
Cincinnati .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	79	34	31.65	8.86	1.26	13.65	—
Boston . . .	603,163	129	40	18.60	9.30	.77	3.87	—
Worcester . .	132,044	36	9	16.67	8.33	—	5.55	—
Fall River .	115,549	48	19	56.24	—	—	33.33	2.08
Lowell . . .	101,959	34	7	29.41	2.94	—	5.88	—
Cambridge .	98,639	23	8	21.74	13.04	—	—	—
Lynn	72,497	18	2	5.55	—	—	—	—
Lawrence . .	69,766	25	13	—	—	—	—	—
Springfield .	69,389	20	2	15.00	10.00	—	—	10.00
Somerville .	68,110	11	1	27.27	18.18	9.09	—	—
New Bedford	67,198	34	20	32.35	11.76	—	2.94	20.58
Holyoke . . .	49,286	18	14	44.44	5.55	—	27.77	—
Brockton . .	44,873	9	1	33.33	—	—	—	—
Haverhill . .	42,104	5	1	—	—	—	—	—
Newton . . .	37,794	6	—	—	—	—	—	—
Salem	36,876	14	3	28.56	21.42	7.14	—	—
Malden . . .	36,286	5	1	40.00	—	—	—	—
Chelsea . . .	35,876	5	1	—	20.00	—	—	—
Fitchburg . .	35,069	8	5	25.00	37.50	—	—	—
Taunton . . .	33,656	10	—	10.00	—	—	10.00	—
Everett . . .	28,620	5	—	20.00	—	—	—	—
North Adams	27,862	—	—	—	—	—	—	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	2	—	—	—	—	—	—
Waltham . .	25,198	7	1	—	—	—	—	—
Brookline . .	22,608	3	—	33.33	—	—	—	—
Pittsfield . .	22,589	3	—	33.33	33.33	—	—	—
Chicopee . .	21,031	11	7	45.45	9.09	—	27.27	9.09
Medford . .	20,962	6	3	33.33	33.33	33.33	—	—
Northampton	19,883	3	0	—	—	—	—	—
Beverly . . .	15,302	6	2	50.00	—	—	—	—
Clinton . . .	15,161	2	—	—	—	—	—	—
Leominster .	14,806	2	—	—	—	—	—	—
Newburyport	14,478	3	2	—	—	—	—	—
Woburn . . .	14,300	6	2	—	—	—	—	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	3	—	33.33	—	—	33.33	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	1	1	100.00	—	—	—	100.00
Melrose . . .	13,600	2	—	—	—	—	—	—
Westfield . .	13,418	4	—	50.00	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	1	—	—	100.00	—	—	—
Framingham	12,534	7	1	—	14.30	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	3	—	33.33	—	—	—	—
Weymouth .	11,344	2	0	50.00	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	3	—	66.67	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 2,934; under five years of age, 1,031; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 867, acute lung diseases 298, consumption 340, scarlet fever 39, whooping cough 29, cerebrospinal meningitis 9, smallpox 5, erysipelas 6, measles 31, typhoid fever 44, diarrheal diseases 275, diphtheria and croup 78.

From whooping cough, New York 4, Chicago 7, Philadelphia 8, Baltimore 4, Providence 1, Boston 1, Cambridge 1, Holyoke 2, Brockton 1. From erysipelas, Chicago, Philadelphia, Baltimore, Boston, Cambridge and Newburyport 1 each. From smallpox, Chicago 1, Philadelphia 4.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending June 13, the death-rate was 13.9. Deaths reported, 4,022; acute diseases of the respiratory organs (London) 141, whooping cough 76, diphtheria 56, measles 124, smallpox 13, scarlet fever 39.

The death-rate ranged from 4.7 in Hornsey to 25.1 in Great Yarmouth: London 12.4, West Ham 12.8, Brighton 11.6, Portsmouth 13.1, Southampton 9.9, Plymouth 11.2, Bristol 12.8, Birmingham 14.8, Leicester 9.2, Nottingham 15.1, Bolton 15.9, Manchester 16.8, Salford 15.9, Bradford 14.4, Leeds 15.3, Hull 1.52, Newcastle-on-Tyne 15.7, Cardiff 12.4, Rhondda 16.1, Liverpool 19.3, Sheffield 18.6.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JUNE 25, 1903.

GASSAWAY, J. M., surgeon. Granted leave of absence for two days from June 7. June 19, 1903.

WASDIN, EUGENE, surgeon. Granted leave of absence for three days from June 20. June 25, 1903.

BROOKS, S. D., surgeon. Granted leave of absence for one day, June 22. June 25, 1903.

WHITE, J. H., surgeon. Granted leave of absence for one month from July 2. June 25, 1903.

CARRINGTON, P. M., surgeon. Six days' leave of absence, under paragraph 189 of the regulations, from June 20, 1903. Granted extension of leave of absence for 7 days. June 23, 1903.

YOUNG, G. B., passed assistant surgeon. Granted leave of absence for two months from July 7. June 22, 1903.

SPRAGUE, E. K., passed assistant surgeon. Leave of absence for seven days from June 4, 1903, granted Passed Assistant Surgeon Sprague under paragraph 191 of the regulations, amended so as to be for four days only.

Relieved from duty at Fort Stanton, N. M., and directed to proceed to Calcutta, India, for duty in the office of the U. S. Consul-General. June 25, 1903.

GRUBBS, S. B., passed assistant surgeon. Granted extension of leave of absence for seven days from June 23. June 18, 1903.

GWYN, M. K., assistant surgeon. To report to Assistant Surgeon V. G. Heiser, recorder of board of examiners, Manila, P. I., on August 8, 1903, for examination to determine his fitness for promotion to the grade of passed assistant surgeon. June 20, 1903.

HOBDY, W. C., assistant surgeon. To report to Passed Assistant Surgeon L. E. Cofer, recorder of board of examiners, Honolulu, T. H., on August 15, 1903, for examination to determine his fitness for promotion to the grade of passed assistant surgeon. June 20, 1903.

EARLE, B. H., assistant surgeon. Granted leave of absence for seven days from June 25. June 23, 1903.

BREADY, J. E., acting assistant surgeon. Leave of absence for three days granted Acting Assistant Surgeon Bready by Bureau letter of June 6, revoked. June 22, 1903.

HARRIS, B. Y., acting assistant surgeon. Granted leave of absence for thirty days from July 22. June 22, 1903.

SWEETING, C. B., acting assistant surgeon. Granted leave of absence, on account of sickness, for thirty days from June 10. June 18, 1903.

ILTIS, G. W., pharmacist. To report to Passed Assistant Surgeon W. G. Stimpson, chairman of board of examiners, San Francisco, Cal., on June 29, 1903, for examination to determine his fitness for promotion to the grade of pharmacist of the second class. June 22, 1903.

BOARDS CONVENED.

Board convened to meet at Washington, D. C., June 25, 1903, for the preparation of sketch plans and memoranda relative to a hospital building at Ellis Island N. Y. Detail for the board: Assistant Surgeon-General L. L., Williams, chairman; Assistant Surgeon General W. J. Pettus; Surgeon G. W. Stoner; Passed Assistant Surgeon J. C. Perry, recorder.

Board convened to meet at San Francisco, Cal., June 29, 1903, for the examination of Pharmacist G. W. Iltis, to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the board: Passed Assistant Surgeon W. G. Stimpson, chairman; Assistant Surgeon C. W. Vogel, recorder.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING JULY 4, 1903.

J. T. MILLER, acting assistant surgeon. Detached from recruiting duty; and ordered home to wait orders.

R. B. CHAPMAN, acting assistant surgeon. Detached from recruiting duty, and ordered home to wait orders.

D N. BERTOLETTE, medical inspector. Ordered to Washington, D. C., as member of the Naval Medical Examining Board.

J. A. MURPHY, assistant surgeon. Detached from the "Monadnock," and ordered to the "Celtic."

R. K. MCCLANAHAN, assistant surgeon. Detached from the "Oregon" and ordered to the "Villalobas."

RECENT DEATHS.

Henry Melville Chase, M.D., M.M.S.S., died in Lawrence, June 15, 1903, aged sixty-five (65) years.

BOOKS AND PAMPHLETS RECEIVED.

An English Handbook of the Paris Medical School. By A. A. Warden, M.D., with Prefatory Letters by Lord Lister and Prof. W. W. Keen. Philadelphia: P. Blakiston's Son & Co. 1903.

Address.

THE SHATTUCK LECTURE.

THE SOURCES, FAVORING CONDITIONS AND PROPHYLAXIS OF MALARIA IN TEMPERATE CLIMATES, WITH SPECIAL REFERENCE TO MASSACHUSETTS.*

BY THEOBALD SMITH, M.D., OF BOSTON.

INTRODUCTORY.

AFTER I had accepted the honor of addressing you this evening as Shattuck lecturer, several topics of great interest to me presented themselves. After carefully considering them in the light of the provisions of the Shattuck bequest, it seemed to me that a discussion of malaria, with special reference to our own State, would at this time be the most useful. I accepted this self-imposed task the more willingly as since 1895 I had been giving much time during the summer months, under the auspices of the State Board of Health, to the study of malaria and the local conditions favoring it. Most of the facts I have personally gathered we owe to this board; for without their active co-operation the topography of the disease could not have been investigated.

If we were to depict the dissemination of malaria, this scourge of an invasive and militant civilization, upon the globe, we would paint it as a black belt girdling the tropical world and extending its lesser shadows in tongues toward the temperate zones. These shadows become less and less distinct the farther north we go. Though the harm it does to northern civilization is infinitesimal compared with its almost forbidding attitude in the tropics, yet even with us the energy needed for the ceaseless struggle for existence suffers severely when malaria is invading the blood, the integrity of which is so essential to our well-being.

Many things have conspired to bring about a renewed public interest in this disease. First and foremost the stimulus created by the colonial expansion of European nations, next the conditions which paved the way for a scientific demonstration of the existence of an intermediate host or carrier in the mosquito, and lastly the tendency of the intelligent classes in our climate toward suburban and rural homes and the general quickening of all interests in animal and plant life, have enlisted not only the attention of the public but their material support for the suppression of conditions favoring malaria. These various interests are perhaps a sufficient excuse for dealing with the newer aspects of this subject on this occasion. But the greater stimulus to me has been the fact that malaria is a prevalent disease of our State, that it has for us a decidedly sanitary as well as economic bearing. Some overworked and apathetic practitioners in rural communities may perhaps say, "What have the newer developments in regard to malaria to do with us? We can cure tertian fever with quinine and we can with equal readiness cure any relapse." This is true as far as it goes; but it would be a very narrow view to take and would, I feel sure, be spurned by our society as unworthy of its past record and future promise. There is, however, a concealed, or at least overlooked, misinterpretation here which I cannot pass over in silence.

Medicine's legitimate field of work is not only sickness but health. Medical science has been moving the pivotal point of successful combat with disease more and more toward the well man. Hence we have the two great departments of the medicine of to-day, the curative and the preventive. The latter, the latest to develop, is yearly growing in importance and will eventually overshadow the former; for it is based on sounder biological and economic principles. Preventive medicine acts in an entirely different way from curative medicine. The latter saves its patient here and there and its services are conspicuous and positive, but the former works only collectively in a negative way and its services are inconspicuous. It also saves lives and prevents disease, but only through cold and dry statistics can it lay any claim to its achievements. It works by slow increments. Like the builder's screws which, placed under a building, raise it through an inappreciable distance each day, so preventive medicine slowly raises the sanitary level, and the total aggregate of all the inappreciable increments means many lives saved and much illness prevented. The study of malaria and the application of the principles underlying it mean no new cures, but a steady elevation of the healthfulness of rural life, the only source of a robust generation.

My task was finally made still easier from the observation I have made frequently of late that among many physicians, engineers and educated people generally, the mosquito has as yet no assured position as a transmitter of the malaria parasite. If our recent developments are to have much value, they must be applied at once, the principles must be made operative and enter intimately into the life of rural populations. We have become now fully cognizant of the hurtfulness of sewage out of place and of sewer gas. In fact our legislative sensitiveness to sewer gas became so great that both capital and labor trusts are said to batten on the severe restrictions created by it. Of now much more definite significance in pathology than sewer gas is the malaria organism! But the history of sewer gas legislation shows what can be done if the public interest is once aroused. Fortunately, the prevention of malaria does not demand such artificial measures as are in use against sewer gas, but only such as will add permanently to the utility and beauty of the land.

THE LIFE CYCLE OF THE MALARIA PARASITE HISTORICALLY AND BIOLOGICALLY CONSIDERED, WITH SPECIAL REFERENCE TO PLASMODIUM VIVAX, THE PARASITE OF TERTIAN MALARIA.

The proper presentation of my subject demands at the outset a very brief *résumé* of the main facts of malaria as known to-day, so that we may be able clearly to apprehend the application of these facts in the framing of preventive measures. The development of our positive knowledge of malaria etiology may be divided into two periods. The first embraces the period from 1880 to 1895 and is chiefly concerned with the study of the malaria parasite in human blood and the clinical interpretation of its

* Delivered before The Massachusetts Medical Society, June 9, 1903.

various appearances. The second period, extending from 1898 to the present, is concerned chiefly with the sexual reproduction of the parasite in the mosquito and with many questions of immunity and epidemiology.

The facts elucidated during the first period may be considered as already common property of the profession. They are included in all text-books on clinical medicine. All students who graduate from first-class medical schools are able to recognize malaria parasites and are prepared to make a diagnosis with the aid of suitable microscopes and accessories. Even many older practitioners have prepared themselves to do the same thing.

A detailed account of the discoveries of this first period would thus be superfluous; but I cannot refrain from mentioning the more important stages in its history, if only as a fresh acknowledgment of the arduous labors of those who were the important contributors. For this first period the excellent detailed historical *résumé* given by Thayer and Hewetson [1] should be consulted by all those interested in the laborious progress of science as well as its immediate achievements. To it I must also refer the student of malaria for a full bibliography to 1895.

In 1880 the parasite of malaria was first recognized as such by Laveran, then a French military surgeon stationed in Algiers. In 1885 Marchiafava and Celli in Italy pointed out the possible significance of the segmenting bodies as reproductive phases in the life-cycle of the parasite and insisted upon the fact that the parasites were within the corpuscles and not merely attached to them as Laveran maintained. In the same year (1885) a new observer appeared upon the field in Italy whose researches were, next to those of the actual discoverer of the parasite, the most important as bearing upon the parasite in the blood of man. Golgi described in detail the growth of the microorganism of quartan fever and some years later that of tertian fever. He points out differences between these two parasites at various stages in their growth and first definitely associates the segmentation with the paroxysm. He shows that quotidian fevers are due simply to two or three groups of parasites maturing on different days. Henceforth the microscope would enable the skilled observer to make a diagnosis between tertian and quartan fever, to recognize quotidian types and to approximately fix the time of the paroxysm. This great advance did not include in its scope what we now know as the more dreaded estivo-autumnal or tropical fever, a type of malaria practically unknown in New England, excepting as it may be imported in isolated cases. Councilman was one of the first to insist upon the association of certain forms of parasites with the more irregular and continuous fevers. In 1889 Marchiafava and Celli and Canalis headed a long series of investigations upon this third type of fevers. This is not the time to recount the many shades of opinion, the many and diverse classifications into distinct varieties of the estivo-autumnal type as the result of laborious investigations. In brief, it may be stated that the tendency is to regard the varieties of this third type of fever as a unity to-day.

With the middle of the last decade the study of the malaria parasite in the human body seems to have exhausted itself. As is the case where the microscope is the only tool, interpretation is difficult; and there is always danger in the framing of hypotheses from what we see that we may put the cart before the horse, as either method usually satisfies appearances. The stimulus which was to bring renewed life into this subject came from several different directions and with their aid the end the century saw revealed one of the most interesting biological phenomena, in which three different organisms combined to complete what is in many respects a most vicious circle for one of them. The second period presents a congestion of interesting details from several distinct sources. These details are not yet widely known, and an historical survey would be misleading. The simplest method which presented itself to me was to give a very concise sketch of the tertian parasite as it is known to us to-day and then refer briefly to the sources contributing the fertile hypotheses.

The parasite of tertian fever in its earliest stages appears within the red corpuscle either as a small ring or as a body consisting chiefly of slender filamentous prolongations or pseudopia. Examined fresh, it exhibits ameboid movements most active at the temperature of the blood. Soon reddish brown pigment granules begin to appear which increase in number with the size of the parasite. Before the end of forty-eight hours the parasite has grown as large as the host-cell, and the latter may be still seen in faint outline or it may have completely disappeared. At this time signs of segmentation appear. The pigment tends to gather into a more or less compact mass in the center, and the parasite separates into from twelve to twenty-four small nucleated bodies, the so-called spores of the older writers, the merozoites of the present. These small bodies again enter red corpuscles, where the same process is passed through to the stage of segmentation or schizogony. The latter is associated with the paroxysm as already determined by Golgi.

This process of asexual reproduction is the one which is mainly responsible for the symptoms of disease. It destroys red corpuscles, and the fever induced may be due either to the corpuscular débris or perhaps more reasonably to the foreign substance of the parasite set free or left behind when the merozoites break away from the mother parasite to begin life anew.

After a certain time, as yet indefinitely known, the process takes another direction. The young merozoites, after entering red corpuscles, instead of growing into the segmenting bodies described above, develop into forms which closely resemble those bodies, but which do not segment. They are the male and female elements concerned subsequently in the body of the mosquito with sexual reproduction. The female body is known as macrogamete, the male as microgametocyte. These three individuals, the segmenting body or schizont and the male and female bodies, have been recently distinguished from one another by Bastianelli and Bignami,[2] Grassi,[3] and more in detail by Schaudinn,[4] who gives a number of differential characters pertaining to the structure of the nucleus, the cytoplasm, pigment, vacuole, and time of growth

of the sexual and asexual individuals. In other words, with proper methods of fixation and staining the skilled observer can determine at an early stage of the intra-cellular parasite to what cycle it belongs.

Leaving aside as somewhat beyond the scope of this lecture the characters of the sexual elements or gametes, I may simply state that they develop into bodies which slightly exceed those of the adult schizonts. While the latter rarely exceed 10 mm., according to Schaudinn, the former may become 12 to 16 mm. in diameter. When they have reached this stage no further changes occur until they have been drawn into the mosquito's stomach. It should be stated, however, that when freshly drawn blood is watched, further changes do occur in the male body, which consist in the extrusion of spermatozoa or microgametes, the so-called flagella of earlier writers. This extrusion is brought about by conditions simulating those in the stomach of the mosquito.

The life cycle of the malaria parasite thus comes to a standstill in the blood of man, after a certain time to be completed in another host. In the blood drawn into the mosquito's stomach the two sexual elements or gametes rapidly complete their development. The male element extrudes four to eight flagellate bodies or microgametes, which are from $2\frac{1}{2}$ to 3 times the diameter of a red corpuscle in length. These move and lash about actively, tear themselves away from the parent body, and move through the fluid. One of these penetrates into a macrogamete. This process of fertilization is similar to that of higher forms. The male element, composed largely of nuclear matter, unites with the nuclear matter of the female element to form a new nucleus.

The fertilized female body after about ten minutes begins to push out a hyaline prolongation, which gradually grows until the entire body has assumed a wormlike form. This little worm (oökinet) begins at once to seek its future abiding-place where it is to produce the countless infecting sporozoites. It penetrates the epithelial layer of the stomach and comes to rest beneath the external elastico-muscular tunic of this organ. In this situation the parasite slowly goes larger, and as it grows bulges the external tunic of the stomach, which forms its envelope, outward into the body cavity. Up to five hundred of such bodies may, according to Grassi, develop the stomach walls of a single individual. Their final size varies more or less according to external temperature and food supply. During the enlargement of these bodies profound internal changes are under way. The fused nucleus of the original oöcyst undergoes repeated division. The new nuclei become the centers of irregular masses, the sporoblasts. Each new nucleus again subdivides into an indefinite number of minute nuclei, which appear on the periphery of the irregular masses, or sporoblasts, and there, by gathering about them cytoplasm, they eventually form the myriads of fusiform bodies known as sporozoites. These when mature become detached from the mother mass, and when the cyst bursts they enter the body cavity. They are very slender bodies, on an average 14 mm. long and between 1 and 2 mm. wide in the middle. They possess the power to change their form as well as to move. After their discharge into the body cavity, some attraction draws them to the salivary glands, which they penetrate and where they imbed themselves in the secreting cells and in the lumen of the gland.

These slender mobile organisms (sporozoites) are discharged into the blood of man when the proboscis of the infected mosquito penetrates the skin and reaches a vessel. Schaudinn recently described the entry of two of these bodies into red corpuscles as observed by him through the microscope. Within the red corpuscle each body begins the life cycle anew.

The time required for the formation of sporozoites in the mosquito varies with the temperature. According to Grassi the shortest period is about ten days. Allowing, according to the same observer, about ten days between inoculation by the mosquito and the appearance of the fever, at least twenty days would elapse after a mosquito had become infected before another case would appear.

We have now sketched, in bare outlines, the life cycle of the malaria parasite and with it the mode of transmission of the disease from man to man. As I stated before, the unraveling of this wonderful chain of events was not accomplished by one man, but a number of contributors have assisted in interpreting this wonderful bit of parasitism.

The germs of hypotheses concerning the mosquito have been traced well back.* In 1882 A. F. A. King advocated the mosquito theory on the basis of general epidemiological facts.

Manson, in 1894, declared for the mosquito as transmitter. The mosquito draws the parasites into its body with the blood. There spores are formed and when the mosquito dies they are shed broadcast in the air and the water, and we become infected when we inhale or ingest them. His hypothesis was evidently suggested by his important work on Filaria.

In the experimental studies upon the malaria of cattle, known popularly as Texas cattle fever, the writer,[5] in association with F. L. Kilborne, after four years of nearly continuous investigation arrived at certain conclusions in 1893 which have been the forerunners of the well-established principles governing human malaria.

The blood parasite in this affection lives within the red corpuscles. The ectoparasite which draws it out of the body is the Southern cattle tick (Boöphilus bovis, Curtice). But the process of transmission is more complicated than that for malaria discovered over five years later. The mother tick which draws the blood and in it the parasite into her body never attacks another animal. After having gorged herself with blood designed for the nourishment of the ova, she drops to the ground, deposits a large number of eggs, and dies. The young larvæ, emerging from the eggs after three or four weeks, attach themselves to cattle, and in doing so inoculate the blood parasites transmitted to them by their mother. It will thus be seen that nature had to provide for the infection of an unborn generation of ticks in the body of the mother tick in order to have the

* For a full historical résumé, including bibliography, we are indebted to George H. F. Nuttall. — Johns Hopkins Hosp. Rep., Vol. viii

malaria parasite transmitted to other cattle. When this complicated mechanism for the transfer of a minute blood parasite came to light after two years of experimentation, it seemed so wonderful that it staggered my belief in the etiological rôle of the bovine malarial parasite, and new experiments had to be tried to make this wonderful mechanism credible. The malarial organism was soon rehabilitated, however, when we found that the disease could be produced without the aid of the cattle tick by simply inoculating with the blood of cattle carrying it. It could also be shown that the disease could be produced at a distance by simply importing adult female ticks from an infected locality, breeding the larvæ from the eggs and putting them on susceptible cattle. I speak of these experiments because they completely refute the hypothesis occasionally presented that the mere sting or bite can produce disease by a process akin to poisoning and because they illustrate the symbiosis existing between the cattle and the blood parasite on the one hand and the blood parasite and the cattle tick on the other.

Here we have the first actual demonstration that ecto-parasites drawing blood inoculate the virus when they sting. It remained too strange a fact to be properly accepted, but it slowly began to stimulate students of human malaria, as shown in their references to the implied analogy. Notably the Italians were impressed with it, and without doubt the fact that Koch,[22] in 1898, was able to repeat and confirm the experiment upon cattle in Africa led him to attack the malaria problem with his usual energy. In the meantime Ross, [6] working in India, had, in 1898, practically worked out in certain mosquitoes the cycle of bird malaria, which subsequently proved to be nearly identical with the cycle as observed in human malaria. Ross is therefore the one to whom the credit for demonstrating the malaria cycle belongs.

But there were other contributing sources which were essential to an understanding of the significance of certain forms of the malaria parasite. Since Laveran's discovery in 1880 it was known that certain large forms of the malaria parasite, when the blood containing them was watched under the microscope, extrude four or more delicate filaments which are actively motile for a time. There were also the peculiar crescent-shaped forms in the blood in the tropical fever which puzzled observers. Both the flagellate and the crescent forms were variously interpreted as degenerations and their significance wholly misunderstood. In 1897 McCallum [7] in the study of bird malaria grasped the true significance of these forms when he saw under the microscope the flagellum of one form penetrate into another.

The sexual process here observed at once gave a new significance to these neglected, misinterpreted flagellate bodies, and to the crescents which we now know as the gametes, and which carry on the life of the malaria parasite in the mosquito. At the same time studies by Simond [8] in France on related sporozoa, known as coccidia, revealed the presence of peculiar structures which were speedily identified as male sexual bodies. These two converging lines of experimentation, the demonstration of the transmission of malarial disease by the prick of arachnids in cattle and by mosquitoes in malaria, and the disclosure of sexual phenomena in the malaria of birds and in the coccidia, enabled such skilled observers as Grassi in Italy, Koch in Italy and the tropics, Ross in India, and a host of others, to perfect the details of proof and give them weight before the uninitiated and incredulous multitude of professional and lay lookers-on.

There remained still one problem to be disposed of. The universality of the mosquito and the restricted areas of malarial infection are so clearly opposed to one another that the new facts could hardly be expected to make headway without further work. The many species of mosquitoes, rising into the hundreds, cannot all be concerned in this vicious circle. To Grassi more than to any other belongs the credit of having called attention to the genus Anopheles as the intermediate host of human malaria. So far, there seem to have been no developments to contradict Grassi's work. Not only he, but the English malaria expeditions, and quite recently Schüffner,[9] have traced the parasite of human malaria through certain species of Anopheles. At the same time it is not to be inferred that all species of Anopheles are necessarily carriers, as I shall point out later on, and that in any locality the prevailing species should be tested with reference to this point.

It is interesting to note that one kind of bird malaria (*Proteosoma*) seems to be transmitted by certain species of Culex. Of the other widely distributed form of bird malaria (*Halteridium*), the intermediate host remains unknown.

It would be idle for me to assert that with the discovery of the sexual cycle of the human parasite in Anopheles all the vexed questions concerning the epidemiology of malaria had been disposed of. On the contrary, we have just begun to appreciate the sure footing gained and we must now begin to study those elusive variations in the disease due to latitude, climate and seasons, and to racial diversities, without which practical measures for the eradication of malaria from any given territory can have but little assurance of ultimate success. It is with special reference to these many variable factors that I venture to present the subject to-night.

THE RELATION OF THE TERTIAN PARASITE TO THOSE OF THE QUARTAN AND THE ÆSTIVO-AUTUMNAL OR TROPICAL FEVER.

It is now well known that there are three species or morphological types of malaria parasites. The tertian and quartan parasites were first distinguished by Golgi, the estivo-autumnal somewhat later. The distribution of these three forms and the existing controversy whether they are distinct species or manifestations of but one under different conditions, bring them necessarily within the scope of our subject.

Concerning their distribution it may be briefly stated that the estivo-autumnal or tropical parasite has its home chiefly in the tropics, and extends thence into the adjacent belts of the temperate zones. The quartan parasite has nearly the same distribution, but it is only rarely encountered. The tertian parasite is more cosmopolitan. It is found both in the tropics and in the temperate zones.

A majority of observers are agreed that the three forms are distinct, while a minority are of the

opinion that the three forms really represent one species and that a different environment and perhaps different degrees of immunity account for the different forms. This is not the place to enter into a description of the three types or forms. Good descriptions will be found in Thayer and Hewetson[1], Ewing[10], Ruge[11], and others. Suffice it to state that certain differences between them are thoroughly well established. Among them are the crescents (gametes) of estivo-autumnal fever which are not found in tertian and quartan fevers. The tertian parasite attains a larger size than the quartan, and the red corpuscle is swollen and pale. In the segmenting stage twelve to twenty (Thayer), or fifteen to twenty-five (Ruge), spores (merozoites) are set free, whereas in quartan infections only six to twelve spores are formed. There are also differences in the form of the pigment.

The estivo-autumnal parasite differs from the tertian and quartan not only in the presence of crescents, but also in the absence of sporulating forms in the peripheral blood. The forms there found are rings, at first very minute, then larger. These finally disappear. The segmenting stages are found in the spleen, bone marrow, brain, etc. These differences, and others not mentioned, upon which observers working in different continents on the whole agree, appear sufficient to justify the establishment of three species of malaria parasites. Yet there are good reasons for not considering them impregnable. Assuming for the moment that they are independent organisms, we must meet the interesting fact that in our state and in others similarly situated only the tertian parasite is found. In the many specimens from various towns examined microscopically by me and my assistants, the estivo-autumnal species was not recognized as such in any case. Though many soldiers returning from the Cuban campaign brought this form in their blood, no indigenous cases seem to have occurred as a result of this importation. Recently some evidence has been presented to the effect that the estivo-autumnal type of fever is gaining a foothold about New York City. Jackson[12] reports four cases at West Point, only one of which was imported from Cuba. Peabody[13] describes the same disease in a man who during eleven years was only once out of New York. He went to Pennsylvania three years ago and was away four days. Patterson[14] thinks that this type began to appear since 1898.* If we maintain that the estivo-autumnal and the tertian parasites are distinct and independent organisms, we are obliged to support as a corollary one of several propositions: (1) The transmitter of the estivo-autumnal fever is wanting. This is not improbable even with *A. maculipennis* among us; for the crude external species characters may be the same as those in the South, yet the physiology of the insect may be decidedly modified by a colder climate. (2) The mean temperature with us is too low to successfully mature the tropical parasite in the mosquito. (3) The difference in temperature and other meteorological factors are sufficient to repress and suppress this parasite in the blood while we live in this climate. Some of the soldiers who came from the Cuban war affected with malaria showed at first both estivo autumnal and tertian parasites in their blood. Later on the former disappeared and the latter remained, in some cases producing relapses. This disappearance of the graver type of infection and the persistence of the milder type was noticed by Ewing[10] in the military camp at Montauk, N. Y. Does it mean that the soldiers were infected with two parasites at the outset, or did the estivo-autumnal assume the tertian form in the northern climate?

The question is of great interest and importance, yet there is singularly enough no decisive argument which can be applied to definitely settle it one way or the other, although the preponderance of observation and experiment is in favor of the pluralistic view. This has been well summarized recently by Ruge.[15]

CONDITIONS UNDER WHICH THE HUMAN BEING MAY BECOME SOURCE AND CARRIER OF MALARIAL INFECTION.

Our present position as regards the etiology of malaria demands at least two links in the chain of causation. If one is absent the disease must fail to appear. They are:

(1) Infected human beings.

(2) Mosquitoes of the genus Anopheles.

In order to discuss intelligently the relation of human beings to the dissemination of the disease, it will be necessary to recall the fact already described, that in the fresh attack the asexual multiplication of the parasite goes on in the blood for a time. Then sexual forms appear, which, I think, are best interpreted as indicating a beginning of immunity. The mosquito can be infected only through the sexual forms. The important question before us is the relative danger as a source of malaria parasites of the infected person who comes from, or lives in, the region usually free from malaria and of one who comes from a region in which malaria is endemic. An attempt to discuss this complex question requires a brief statement of the new doctrine of acquired immunity in malaria.

This was brought distinctly before us by Koch[16] in the reports of his work in the tropics. The idea that immunity can be acquired toward intraglobular parasites was not new, however. It was shown by myself and Kilborne that immunity is acquired toward bovine malaria, and this fact has been widely exploited in our country to prepare cattle for importation into endemic regions where susceptible animals usually die. In investigations made in East Africa and New Guinea, R. Koch came to the conclusion that malaria is very prevalent in young children, but that it gradually disappears with age and that the adults have acquired immunity. In them the enlarged spleen and other concomitants of malaria have disappeared. A. Plehn[17] disputes the latter as not in harmony with facts, and cities his own studies of the blood of adults as well as the examination of the spleen to show that they too suffer to a considerable degree with malaria. The point I wish to bring out does not concern their controversy, but their essential agreement upon the great prevalence of malaria in children. Plehn, who made careful observations upon this subject, states that, while the youngest children may have numerous parasites in their blood, their

*I subsequently found that Ewing had reported another case in Journ. Exper. Med., 1902, vi, p. 120.

general condition remains undisturbed and temperature elevations are uncommon. The same is true of many adults of whom Plehn found about 50% carrying the malaria parasite without the, to us, familiar clinical disturbances. Christophers and Stevens,[18] in their work under the auspices of the Royal Society of England on the west coast of Africa, in India and other regions in the tropics, find that a large per cent of the native children have parasites in their blood. There is a gradual disappearance with age. After the age of twelve infection is rarely demonstrable. The disease is always mild.*

Annett, Dutton and Elliott[19] of the Liverpool School of Tropical Medicine observed in Nigeria the extensive infection of children. Christophers and Stevens regard this phenomenon of such importance that they base upon the infection of children the prevalence of the disease, or what they call the "endemic index," in any given locality.

Though Koch has been severely attacked for his hastily formed doctrine of immunity, more particularly by Glogner[20] and Kohlbrugge,[21] there can be little doubt that the available data derived from human and comparative sources agree with this doctrine. A distinction should, however, be made between what I prefer to call clinical immunity and biological immunity. An individual may have acquired a considerable degree of biological immunity, but owing to the effort required and the resulting loss of tissues he may come out of the struggle badly off. This must not shut our eyes to the fact, however. In this protean variation of disease, due to the struggle between two variable organisms, we must clearly keep in mind "*Den ruhenden Pol in der Erscheinungen Flucht*," even if it does not always help us cure the patient. The same principle which meets one patient on its downward curve and destroys him, meets another on its upward curve and saves him. We must study the curve and learn where the patient fits it, and where and how to apply assistance.

The general observation in tropical malaria that children are the chief objects of attack, that it is in fact a children's disease there, is another proof of the general doctrine of acquired immunity, for in nearly all endemic infectious diseases the virus attacks by preference the young because immunity protects adults.

The subject is, however, still more complicated. It would be folly to transfer the doctrine of immunity from natives of Africa to natives of our northern climate settling there. The former do not acquire all their immunity in a single lifetime. They start at birth with enough inherited accumulation of immunity to need but a little further training to come out victorious. That the Anglo-Saxon baby could do likewise is hardly within the range of probability.

The difference between the native of the tropics and the native of the temperate zone is probably dependent on a variety of physiological factors. Among these I am inclined to place differences in the biology of the red corpuscles at the front. The red corpuscle is subject to much greater vicissitudes as regards osmotic changes in the tropics than in temperate zones. With us, temperatures below a certain mean are equalized by clothing and artificial heat. Temperatures above a certain mean are not equalizable. They must be endured. Hence the heat-regulating mechanism must come into more active play, the output and intake of water is large, and with it the changes in the concentration of the salts of the blood must vary more or less. The native of hot climates is adapted to these changes, primarily by a greater resisting vigor of the red cells. The temporary resident of the tropics suffers from those disorders incidental to the taking care of corpuscular débris, foremost among which are those of the liver. Added to this natural increase in the resisting power of the red cells is one due to increased use, such as takes place when new corpuscles must replace those destroyed by use and by malaria parasites. The blood-forming organs up to a certain point are strengthened by use.

Secondly, a specific immunity due to the malaria parasite itself must accumulate through generations in infected localities, which immunity may reside both in the blood and in the host cells themselves. This subject of the relation of the red cells to immunity I can only touch upon here. It is one which I think will repay thorough investigation.

In the malaria of our latitude the effect of the parasite upon natives and those coming from still colder climates is not seen in its frankest manifestations, because quinine enters at once to suppress the disease. When treatment is neglected cases do occur now and then which indicate that malaria freshly introduced into a locality may prove serious and even fatal at times.*

In our climate the French Canadians appear to be most susceptible, and in general it seems to be true, as with yellow fever, that the further north the home of the one who immigrates into an endemic region the more severe the disease when it does appear.

A similar relation between latitude and susceptibility seems to exist in bovine malaria. The disease imported into the northern states from the southern enzoötic territory, though carried by healthy animals in their blood, is very murderous to the northern animals. On the other hand, cattle living in the tropics, but not in infected localities, are much more resistant, as indicated by Koch's experiments in Africa. The same seems to be true of the Venezuelan form of this disease, called Lomadera, and studied by Ziemann.[23] All that can be claimed from various observations upon immunity is that the influence of the malaria parasite upon the host is in the direction of a biological immunity. The latter may or may not reach a clinical immunity, for that would depend upon the degree of resistance with which the individual started in life, and the interruption of the process by the continued use of quinine.

During the immunization which goes on in the course of the manifest or latent infection, how early do the fully matured gametes appear, and how long

* "It must be understood that in speaking of a case of malaria in children we are referring only to the presence of parasites; the children are perfectly well and present none of the characteristic signs observed in Europeans affected with malaria." (Lagos, West Coast of Africa.) See Rep. to Malar. Committee. Third Series.

* In one town a young woman who was being treated without quinine told me that she had had thirty-six chills in thirty-nine days. An examination of the blood certainly confirmed her statement, for the disease had produced marked anæmia and characteristic changes in the red cells.

do they remain in the blood? After fresh infection does the highly immune body destroy the injected sporozoites or do they form gametes? These questions are proposed in view of their bearing upon the infectiousness of the individual in different stages of the disease. Schaudinn, who states that with suitable methods gametes of tertian fever may be readily detected in the blood and distinguished from the schizonts or sporulating forms, has seen the former appear in one case after the third attack. But Schaudinn made his studies in a permanently infected region on the eastern coast of the Adriatic in Istria. Thayer and Hewetson have given summaries of their observations of the sexual forms of parasites, and from their report I take the following figures: in 153 cases of tertian fever, flagellate bodies were seen in 6. Of 105 cases of estivo-autumnal fever they were seen in 18. "In a half of the cases the paroxysms had ceased; in 8 out of 20 instances quinine had been previously given; that is, for days and sometimes for weeks after the activity of the infection had certainly been overcome, we were able to see flagellate bodies. . . ."

In the case of the crescents, the gametes of estivo-autumnal fever, they found in over 70% of the cases the crescents appearing in the second week or thereafter, practically none in the first week, if two doubtful cases are thrown out (p. 173). It seems that the gametes tend to appear after the more active process has subsided, and if the conditions where these cases were studied are similar to those in our latitude we may assume that patients may be infectious in the presence of Anopheles during and after the second week. However, I am not inclined to accept fully the findings of the latitude of Baltimore or Istria for Massachusetts.

G. Maurer,[24] studying tropical malaria in Sumatra, states that gametes appear in the blood only some time after the beginning of the fever, in some earlier than in others. In some they do not appear at all. The appearance of crescents is completely suppressed when the earliest fevers are treated rationally with quinine.

There are a number of factors working against the ripening of gametes in the blood in natives of our climate. These are the absence of any inherited or acquired immunity to begin with and the prompt use of quinine. Cases may, however, remain untreated. They may possess more or less natural resistance. Even cases treated successfully in one season may have relapses in the early spring of the following season. Such cases are probably much more likely to prove sources of infection than fresh cases. In them immunity has made some progress. These relapsing cases are probably the starting-point of the infection during the year.

The most dangerous individuals are those who have lived in permanently infected localities for a long time and who possess considerable resistance. In them the virus is latent and prepared to appear clinically under satisfactory provocation. Caccini[25] made an exhaustive study of the latent virus of malaria in Italy and the causes of its occasional outbreak into a paroxysm. He found that the general condition of the people was of considerable moment. The well-fed and well-housed masters had few attacks as compared with the laborers under them. Heavy work during the vintage and harvest, gastro-intestinal troubles, a sudden chill, sleeping out of doors, being caught in rains, all predisposed to relapses. Certain foods causing vomiting, certain medicines, intercurrent illness, even sea-bathing, brought on an attack in some persons. It is related by A. Plehn,[26] with citation of cases, that persons having had no clinical disturbance in the tropics during a temporary residence because of prophylactic quinine treatment, on their return to Europe passed through a regular attack either on shipboard or in their native country. In such instances the infection occurred unperceived and may have been repressed by quinine from the start.

Though the conception of the latency of malaria is a very old one, yet its epidemiological significance has had no recognition until lately. The persistence of malaria has been chiefly of clinical interest, and the patient was considered, rather than his environment. To-day we are slowly becoming accustomed to the thought that the latter must also be considered. Absence of illness does not necessarily exclude the presence of infecting organisms, and carriers of infection must be kept in view as possible centers of disease. We are now fully acquainted with the possibility that bacteria may persist in the body after recovery. The vexatious question of diphtheria bacilli in recovered cases is present without doubt in the minds of most physicians. In typhoid fever the urine and feces may contain the bacilli after recovery. I might give many additional illustrations. But there is another fact of similar significance, namely, the presence of pathogenic bacteria in the well who have come in contact with infection. Thus, typhoid and cholera microbes have been found in the feces and diphtheria bacilli in the throat of well persons not previously diseased. This tendency toward a symbiosis between host and parasite is much more pronounced in the case of animal parasites, especially those belonging to the malaria group. Thus in bovine malaria the parasite has been demonstrated by inoculation to exist in the blood of immune animals three years after the last opportunity for infection.[27] More recently Wasielewski[28] has shown that one of the malaria parasites of birds (*Proteosoma*) remained in the blood five months after infection. The more favored theory would undoubtedly be that when the host becomes completely immune the blood parasites can no longer subsist in him, but I am inclined to believe that such complete immunity does not exist and that whenever an immune human being is infected the parasites go through the process of forming gametes or sexual elements without clinical manifestation and then await the opportunity of being withdrawn by some mosquito. Or else they await the equally desirable moment when the host has committed some indiscretion by which his resistance is reduced, when the parasite rapidly undergoes the usual asexual multiplication in the blood and calls forth a paroxysm. When equilibrium is re-established the sexual elements appear in large numbers. The forms in which the malaria organisms remain latent is a subject of great biological interest. Grassi assumed that sexual elements or gametes undergo parthenogenesis. Schaudinn recently claims to have established the

fact that the gametes may revert in part to forms which multiply asexually in the way familiar to us whenever a relapse is impending.

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(*To be continued.*)

Original Articles.

SUBPARIETAL INJURIES OF THE KIDNEY.

BY FRANCIS S. WATSON, M.D., BOSTON.

(Concluded from No. 2, page 35.)

THE AUTHOR'S SIX CASES.

(1) Laceration of the right kidney, and cerebral concussion. Hematuria of four days' duration. Small tumor in the loin. Expectant treatment. Recovery.

(2) Hematonephrosis — in a previously hydronephrotic kidney — and perirenal hemorrhage, without laceration of the kidney, resulting from violence inflicted upon the right side of the front of the abdomen. Lumbar nephrotomy and secondary lumbar nephrectomy. Recovery.

(3) Laceration of the left kidney. Peritoneum, renal vein and spleen. Retention of urine due to clots in the bladder. Abdominal nephrectomy twenty-four hours after the accident. Death four days later from peritonitis. Injury to spleen not severe.

(4) Rupture of left kidney and spleen, fracture of brim of pelvis, three ribs and arm on the left side. Primary abdominal nephrectomy. Spleen tamponned. Laceration of spleen severe. Peritoneum overlying the kidney ruptured. Death from shock and hemorrhage from spleen, twenty-four hours later.

(5) Rupture of left kidney. Subcapsular and intrarenal hemorrhage. Lumbar incision and suture of the kidney wound on the third day. Recovery.

(6) Laceration of the right kidney, *due to muscular effort*. Resulting hydro-, later pyonephrosis. Infection fourth week after the receipt of the injury. Lumbar nephrectomy five weeks after the accident. Recovery.

(1) *Expectant treatment. Recovery. Laceration of the right kidney and cerebral concussion.*

Hematuria noted with the first urination after the accident — a fall of twelve feet — the blood was abundant for first twenty-four hours, it was present for three days, but in less quantity after the first day. Ecchymosis in the right loin. Patient unconscious for some hours. Swelling in the right lumbar region developed slowly twelve hours after the injury. It was of moderate size and had disappeared at end of ten days. Pain was not noted on account of unconsciousness during the first part of the time following the injury. Expectant treatment. Recovery.

(2) *Lumbar nephrotomy. Secondary lumbar nephrectomy. Recovery.*

A young man was jumped on by an opponent in a street fight, the right side of the abdomen being struck by his knees, while lying on the back. This man had sustained six severe injuries to the right kidney during the previous twelve years; each time there had been hematuria, severe pain in the right loin, and each time the patient had recovered under expectant treatment.

On the last occasion operation was determined by signs of progressive and serious hemorrhage, in the form of hematuria, four days after the receipt of the injury, and by the presence of a rapidly increasing tumor which appeared on the evening of the third day. Hematuria ceased at the same time.

Lumbar incision. Kidney enormously distended by blood clot. No wound of the kidney. A considerable perirenal hematoma, the latter originating from the injured perirenal blood vessels.

Nephrotomy. The kidney was emptied of its blood clot, tamponned and drained through the lumbar incision. It had evidently been hydronephrotic for a long time. The patient made an uninterrupted recovery, but a fistula remained and the kidney was removed some months later by my colleague, Dr. Thorndike, the patient recovering readily from that operation also.

(3) *Abdominal nephrectomy (primary). Spleen, peritoneum and renal vein torn.*

A man fell fourteen feet, striking left side against a plank. Violent lumbar pain. Hematuria lasting until the operation, and blood appearing with the first urination after the accident. Shock severe, free fluid in moderate quantity, and not rapidly accumulating, in the peritoneal cavity. A tumor in the left loin developed immediately after coming to the hospital, half an hour after the injury.

Operation twenty-four hours after the accident. Abdominal nephrectomy. Incision in the left linea semilunaris. Small wound of [illegible] spleen.

Peritoneum over left kidney torn. Immense retroperitoneal hematoma, intra-peritoneal hemorrhage chiefly through the torn peritoneum from the kidney, a small part from the wounded spleen. Wound in peritoneum enlarged. Renal vein found to have been injured also. Ligature of vessels and ureter in one mass. Wound of spleen tamponned. Abdominal wound closed. Drainage through a lumbar incision. Death on the fourth day from peritonitis. Condition of kidney shown in Fig. 1.



FIG. 1. — Case 3 (author's).

(4) *Laparotomy. Tamponning of wounded spleen. Kidney not touched. Left kidney lacerated. Spleen severely injured. Fracture of pelvis, three lower ribs on left side and left arm. Peritoneum torn. Death.*

Patient, a man, fell twenty-five feet into hold of vessel, striking left side. Shock severe, hematuria with first urine, which was drawn with a catheter. The bladder was filled with clots, great pain over left kidney. A rapidly increasing and very large quantity of fluid in the peritoneal cavity. Signs of serious progressive hemorrhage. Operation four hours after the accident. Laparotomy in the left linea semilunaris, incision prolonged outward from its upper end to the quadratus lumborum. The abdominal cavity filled with blood, principal source of which was the lacerated spleen, a smaller part of it coming from the kidney through rent in the peritoneum. Patient's condition too critical to allow of more than tamponning the spleen wounds, and draining through the loin. The patient died fourteen hours later from shock and continued hemorrhage, from both spleen and kidney. Fig. 2 shows the condition of the kidney, as seen postmortem.

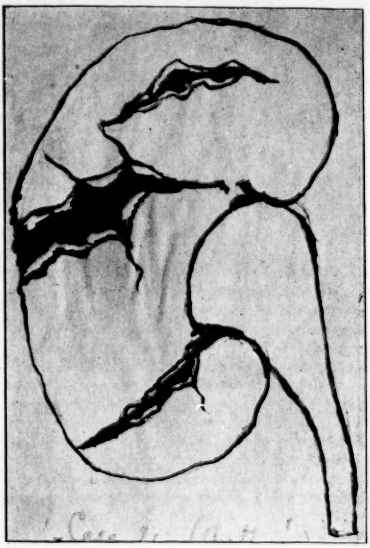


FIG. 2. — Case 4 (author's).

(5) *Lumbar incision and suture of the kidney wound. Left kidney ruptured. Subcapsular hemorrhage. Obstruction of ureter on the fourth day by clot. Recovery. Fistula persisted. Second operation. Pseudohydronephrosis. Recovery. Later condition not known.*

A man fell while stepping off his cart, striking the left side of the back. Great pain in the seat of injury. Hematuria profuse with the first urination. This continued, though in somewhat less degree, for the next four days, the patient's general condition being good during the interval. On the night of the fourth day sudden cessation of hematuria, development for first time of a tumor in loin, this grew rapidly. Operation one hour after the appearance of these symptoms.

Kidney exposed in the loin by lumbar incision. There was a very moderate amount of blood around the kidney. The organ itself was enlarged to more than twice its normal size, and the pelvis was enormously distended by blood clot. The kidney was of a dark purple color.

The fibrous capsule was not torn. There was a laceration of the kidney which is shown in Fig. 3. From it protruded beneath the fibrous capsule a blood clot, which had dissected the capsule from the kidney over nearly the whole of the posterior surface of the organ.

The capsule was incised and the clot expressed through the wound in the kidney by pressure with the hand upon the distended pelvis. The vessels, ureter and pelvis were not injured. The kidney at once resumed its normal size and color on being freed from the clot. No urine was found in the pelvis. The wound in the kidney was closed by seven catgut sutures. Hemostasis was complete

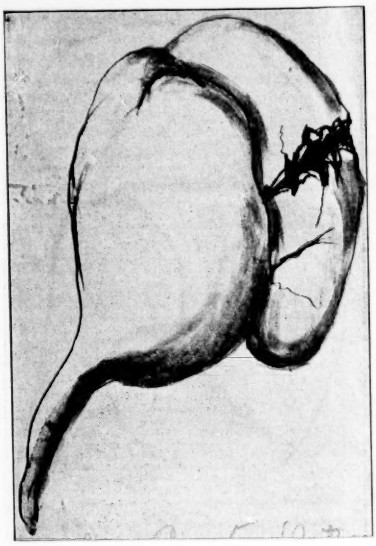


FIG. 3. — Case 5 (author's). Pelvis distended with blood clot.

and immediate, and the wounded surfaces adapted themselves perfectly. (See Fig. 4.)

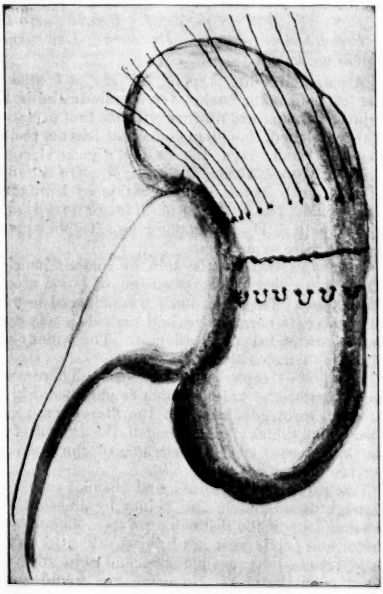


FIG. 4. — Case 5 (author's). Showing closure of wound by suture after removal of blood clot.

The patient made an uninterrupted recovery, but a fistula established itself after the wound had been closed without leaking for five or six days, and the patient had gone home. He presented himself again about two months later to have the fistula closed. The condition of the kidney found at the second operation was that usually termed pseudohydronephrosis, and is shown in Fig. 5.

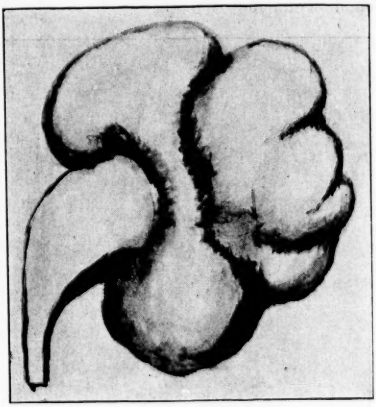


FIG. 5. — Case 5 (author's). Condition found at second operation.

The kidney was exposed in the loin through the old incision. Its anterior surface was adherent to the overlying peritoneum. The fistulous tract led to a sac about the size of a large hen's egg on the outer and posterior surface of the kidney. This sac was incised. No communication could be established between its interior and that of the kidney. Its inner aspect was apparently represented by the kidney's outer surface, and the remainder of its walls by more or less organized exudate. The walls were excised in part, and drainage supplied through the lumbar incision which was otherwise closed.

The patient made a rapid recovery from this operation also, but when discharged from the hospital the fistula had not closed, and was still open when he was last heard from, one month later, two months from the time of the second operation.

(6) *Lumbar nephrectomy for pyonephrosis*, resulting from a laceration of the right kidney five weeks previous, which injury was caused by the slight muscular effort made in stretching up quickly to reach the top of a window which the patient was washing.

The patient was a large woman. Five weeks before the operation she was washing a window, and on making a sudden effort to reach the top of it felt a violent pain in the right kidney, became faint, and vomited. Hematuria of moderate degree was seen at the second passage of urine after the accident, and the urine was noted as being rather red for the next two days. The pain lessened and vomiting ceased after a few hours, and faintness passed off. After a few days she was up and

about again, but did not resume her work again on account of a sense of discomfort and tenderness in the right renal region. Three weeks later this became more marked, and at the end of that week she was seen by Dr. Kelly, who then felt a tumor of moderate size, corresponding to the right kidney in contour and position. He sent her to the hospital, where she remained under observation for a week longer and was then transferred to the surgical service. The tumor during this — the fourth — week had increased in size, and now extended from the free border of the ribs to below the margin of the pelvis, filling the right side of the loin and part of the abdomen. It was tender to touch. On the day of her admission to the hospital the temperature rose to 101°F, and pus appeared for the first time in the urine. Operation, June 2, 1903.

The kidney was exposed in the loin, and found to be greatly distended by pus, and saculated. The contents evacuated through a trocar, and the interior of the organ irrigated. The kidney was firmly adherent to the overlying peritoneum and the under surface of diaphragm, and less so to the lumbar fascia. The adhesions were separated from the fibrous capsule except in front, where the capsule was peeled off and left attached to the peritoneum.

The *ureter* was adherent, for the first four inches of its length, to the lower pole of the kidney, was greatly thickened, and, although not occluded permanently, had probably been closed at intervals at the point corresponding to its adhesion to the lower end of the kidney.

The pedicle, which was very short, was tied in two parts, the vessels in one, the ureter in the other.

The outer wound was partly closed, leaving free space for drainage by iodoform wicks.

The appearance of the kidney is shown in Fig 6.

There was a partially healed laceration extending transversely across the outer convex border, to midway on both the front and back surfaces of the kidney. At each end of this wound was an opening large enough to admit the tip of the little finger.

The part of the wound on the anterior surface was more firmly closed than that of the posterior, but both were sufficientiy tight to have prevented any escape of the kidney contents into the perirenal tissue. The appearance of the kidney suggested that the organ had been hydronephrotic previous to the accident. There was, however, upon microscopic examination no disease other than hydronephrosis found to exist. The patient made a slow but good recovery.

TREATMENT.

The most noticeable features in the analysis of all the clinical data are the *high* death-rate attending the expectant treatment, as compared with any form of operative intervention, and the conspicuously *low* mortality of the series of cases treated by operations other than nephrectomy.

The expectant treatment shows at its worst in the cases with intra-peritoneal complications. It cannot, of course, be positively asserted that some of these having abdominal symptoms, treated expectantly and recovering, may not have had an intra-peritoneal injury, but the presumption in that case is, that if it did exist at all, it must have been of moderate character, and we are probably warranted in saying that no patient who has had such complicating injury of a serious nature has recovered under expectant treatment.

The low mortality in the series treated by operations other than nephrectomy, compared with that attending the latter, is obviously due to the fact that the operation which was selected instead of nephrectomy — lumbar incision and suture, tamponning and drainage, or nephrotomy, etc.— was chosen for the reason that the kidney was not found to be so seriously damaged as to require nephrectomy. In other words, the cases were of a less grave nature.

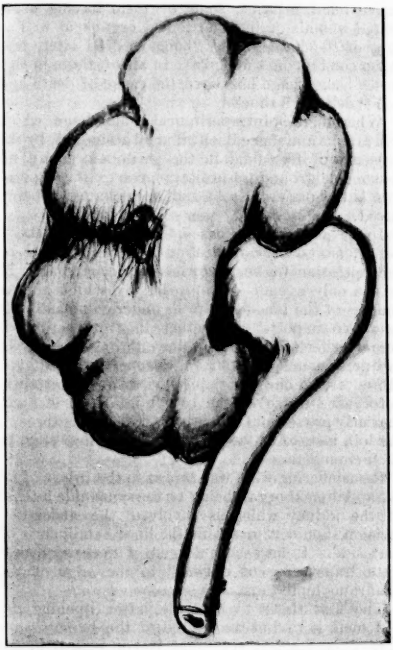


FIG. 6.—Case 6 (author's). Pyonephrosis following subparietal laceration of the kidney produced by muscular effort.

The reason for the even greater difference in the death-rate of this class as compared with that of those treated expectantly is equally clear. It is furnished by the fact that the operations other than nephrectomy save almost all such patients as those who die from hemorrhage or suppuration under expectant treatment.

Thus, these operations which were done for one or the other of the two conditions — suppuration or hemorrhage — in 85 out of 99 uncomplicated cases were attended by five deaths only, whereas 66 died from the same causes out of 81 fatal cases, in the total 273 treated expectantly, 5% of the whole number of cases in the former, as contrasted with 24% in the latter.

Hemorrhage is the one factor which most frequently demands *prompt* operative treatment.

Ordinary surgical common sense leaves no room for doubt as to the necessity for operative intervention in the presence of the signs of *progressive* hemorrhage. The only question that can arise is from the difficulty, soon after the accident, of discriminating between shock and hemorrhage. The characteristic feature ordinarily of the former is that it is at its height immediately or soon after the receipt of the injury, while that of the latter, if the bleeding continues, is the increasing seriousness of the symptoms.

There have been a few patients who showed remarkable absence of shock after receiving very grave renal injuries, some of them having associated wounds of intraperitoneal organs as well as that of the kidney, and who have died later, collapse coming on suddenly. In all of these in this series hemorrhage has been the cause of death and not "delayed" shock.

When there is intraperitoneal hemorrhage, which will always announce itself, if at all abundant, by the presence of free fluid in the peritoneal cavity, no reasonable ground for hesitation can exist. Operation is the patient's sole and only chance of being saved.

In the latter class of cases, there is, in the author's belief, moreover, no question as to the nature of the operation to be performed. *Laparotomy* will be the only avenue of approach by which all the sources of the bleeding can be under command. It is of no importance whether the intraperitoneal hemorrhage is from the kidney through a rent in the peritoneum or from an intraperitoneal organ. Moreover, no one can determine with any certainty beforehand which of the two it is. Loss of time, that may prove fatal, may result from going through the loin instead of the abdomen as the first step, in such circumstances.

Remembering what was said as to the injury of an intraperitoneal organ being on the same side as that of the kidney which is involved, the abdominal incision should be made in the linea semilunaris of that side. It may be enlarged, if necessary, best by a transverse cut outward to the edge of the quadratus lumborum.

The first thing to be done, after opening the abdomen, is to find the source of the hemorrhage.

If it is the left side that is concerned, in all probability the spleen is furnishing the greater part of the blood.

Do not stop at this time to clean the abdomen of blood, but *feel* for a wound in the spleen.

If none is found, the kidney is the next most likely source of the bleeding. The peritoneum overlying it should therefore be examined. If hemorrhage is found to be proceeding through a rent in the peritoneum, enlarge it with the fingers, and seize the renal vessels. The patient may *now* be turned upon the opposite side, the abdomen cleared of blood, and the field of operation exposed to view.

According to the character and nature of the damage to the kidney, one or another of a number of operations will be done.

As a fundamental principle, save the kidney or as much of it as possible.

If the blood vessels, pelvis and ureter are intact, and the injury to the kidney is not too great, tampon, or suture, the renal wound and drain through a lumbar incision. If one end only of the organ is damaged, do a partial nephrectomy, closing the resulting wound of the kidney by suture. If the hemorrhage is intrarenal, nephrotomy should be done, tamponning the renal wound and removing the packing after twenty-four hours or so, or closing it by suture, if assured that complete hemostasis can be secured by this means. Supply drainage through the loin by a supplementary incision, and close the abdominal wound.

If the damage to the kidney is too great to allow of these measures, or if the renal blood vessels, pelvis or ureter are injured,— unless in the case of the two latter the wound is capable of being successfully sutured,— nephrectomy should be done.

Do not try to close the wound in the overlying peritoneum if the patient's condition is — as it probably will be in most cases — critical.

Make a lumbar incision for drainage in connection with the nephrectomy, as was advised with regard to the other operations.

If it is the *spleen* from which the hemorrhage is proceeding, and unless the injury to that organ is found to be of slight extent, splenectomy gives the patient his best chance, trusting to pressure by tampon to arrest whatever part of the hemorrhage proceeds from the kidney, rather than to undertake a nephrectomy in connection with the other operation. The spleen does not admit of suture or tamponning that can be relied upon. If one must choose whether the spleen or the kidney shall be removed, let it be the spleen. Splenectomy and nephrectomy were performed simultaneously in two cases only; both were fatal. Splenectomy alone, leaving the kidney undisturbed, was done successfully in two others.

If it is the right side, and the *liver* is involved, tampon or suture are appropriate, and have been successfully applied, either in connection with nephrectomy or other operations upon the kidney, performed at the same time or not, according to circumstances.

In the rarer cases in which other structures than the spleen or liver are associated with the injury to the kidney, the general principles which are applicable to such conditions ordinarily should be carried out. The intestine, for example, will be resected, or sutured bleeding vessels of the mesentery or omentum ligatured, etc., according to circumstances.

UNCOMPLICATED CASES.

It is more difficult sometimes to decide what is best to be done in uncomplicated cases. Such, for instance, as do *not* present evidence of progressive hemorrhage, or that suppuration has occurred, but in which either one or the other may be looked for.

How long is it safe to allow hematuria to continue? How long may a tumor in the loin be left to itself if it has not begun to subside? What are the chances of infection, and how can we know in which cases it is likely to occur or the reverse?

The study that we have made supplies answers in some measure to these questions.

With regard to hematuria. In spite of the fact that, *per se*, it rarely causes death, this in itself cannot be relied upon as a guide to treatment.

This much, however, may be asserted with some confidence, namely, that the great majority of cases in which hematuria is either of short duration even though very profuse — not more than thirty-six hours — or of much longer duration, if the quantity of blood is slight, when it is not secondary, and finally, when there are no signs of progressive hemorrhage shown by the patient, may — so far as any danger from hematuria alone is concerned — be treated expectantly. When the contrary of the above conditions exists, operative treatment should not be delayed.

The conditions presented by the 8 cases dying from hematuria were as follows: It was reported as being secondary in 7. In 3 *death* occurred under expectant treatment, and in 4 after operation. There were 16 cases of secondary hematuria altogether, 5 of which *recovered* under expectant and 4 under operative treatment. The remaining fatal case of the 8 died of exhaustion produced by three weeks' continuous hematuria, in which the amount of blood, though considerable, was not excessive at any one time.

Conditions in connection with hematuria which call for prompt surgical treatment are: (1) The sudden disappearance of blood from the urine, if accompanied by pain, and the appearance, or if already present an increase in size, of a tumor in the loin. These show that the pelvis or ureter has become blocked by blood clot or debris, and demand prompt surgical treatment. (2) Retention of urine due to the presence of blood clots in the bladder. (3) Profuse hematuria continuing longer than thirty-six hours. (4) Prolonged hematuria, unless the blood be in small quantity, and (5) secondary hematuria. (6) Signs of progressive hemorrhage, which under all conditions calls for surgical intervention.

In perirenal hemorrhage surgical intervention is called for by the following indications: Rapid increase in the size of the tumor, or gradual increase if it be prolonged.

The nature of the operation will be determined in the same manner as was described when speaking with regard to this point in connection with the conditions of the kidney found when performing the abdominal operation in cases complicated by intraperitoneal injuries.

It is as clear, in the writer's opinion, that all *uncomplicated* cases should be approached by the lumbar incision primarily, as it is that laparotomy should be the first step in those having intraperitoneal complications.

The question whether one should interfere surgically in *anticipation* of the actual occurrence of infection, and in order to avert it, is one of the most interesting aspects of the subject so far as treatment is concerned, and is certainly open to discussion.

On the one hand we have the fact that of the uncomplicated cases, in which the patients escape the dangers of primary hemorrhage, — which class alone is meant to be considered in this connection, — far the larger part recover without infection having occurred under expectant treatment. On the other we know that suppuration does take place in a considerable number, and when it does it is a serious matter. Also there is no way of determining beforehand whether it will occur at all, or at what time it is likely to do so. Furthermore we know that every lacerated kidney is liable to infection, and that the longer perirenal extravasation or hydronephrosis exist, the greater is the liability to it.

Surgical intervention seems to the writer to be indicated, for the purpose of guarding against, and in anticipation of, the actual occurrence of infection in the following circumstances:

(1) When there is a tumor in the loin — whether it be perirenal extravasation, hydronephrosis, or hematonephrosis — which does not begin to subside within a reasonable time, let us say a fortnight at most.

(2) When the bladder becomes or already is infected, or is especially liable to be so because of the necessity of frequent catheterization, as, for example, with patients having prostatic hypertrophy, or when there is retention due to blood clots.

(3) When there is reason to suspect the previous existence of such diseases of the kidney as tumors, calculus, pyelitis or pyelonephritis.

In the absence of the above conditions, it seems wiser to take the chances of infection, and treat the patient expectantly so long as it does not occur, reserving surgical procedures until it announces itself, and then operating promptly.

SUTURE OF THE RENAL WOUND.

The writer has been able to find but seven cases of subparietal injury in the literature of the subject, in which suture of the renal wound has been done for laceration of the kidney, with his own included eight altogether. These are as follows: Tuffier, in 2 cases; Peyrant, 1 case; Bidault, 1 case; Phillipe-Liege, 1 case; Delbet, 1 case; Brewer, 1 case; Watson, 1 case. In six of the above cases the procedure was most successful, the wounds uniting quickly, and convalescence being materially shortened.

The two cases in which suture was not successful were those of Delbet and of the author. In the former the patient made a good operative recovery, but secondary nephrectomy some time later resulted fatally. In the author's case, fistula, as described in the report of Case 5, resulted.

One notable feature is mentioned by all of the above-named surgeons; namely, that suture of the lacerated wound produced immediate and entire hemostasis.

In view of these facts, and the well-known readiness with which wounds of the kidney — traumatic, if not too extensive, as well as incised — heal, it would seem worth while to apply suture in such conditions as warrant it in these cases of subparietal injury, as well as in exploratory renal incisions, for the closure of which it is frequently employed. Some writers have entirely condemned it, but most of them in referring to it preface their remarks by saying that they have never used it personally, having found tampon and drainage entirely satisfactory to them.

A COMPARISON BETWEEN LUMBAR AND ABDOMINAL NEPHRECTOMY.

Lumbar nephrectomy in subparietal injuries has

been credited by most writers with a much smaller mortality than the abdominal operation. In no previous publication of this class of cases has there been a sufficient number of nephrectomies to warrant this conclusion. The inference has rested moreover in some instances upon the face value of the cases treated by the two methods respectively, without regard to their character; that is to say, the comparison has been made between the total number of each, including both the uncomplicated and complicated cases as well. Inasmuch as there are more of the latter in which abdominal nephrectomy has been the operation done, than of those in which the lumbar method was employed, this is manifestly unjust to the former operation.

Although the number of nephrectomies in the series collected by the writer is nearly four times as many as that of Delbet, — 160 in the former, 44 in the latter,—it also is entirely inadequate for the purpose of drawing final conclusions. It does serve however to show the fallacy so frequently indulged by medical authors; namely, that of relying upon too small a number of data for their conclusions, since even upon the face value of the figures in this much larger number of cases, the verdict in favor of the lumbar operation is contradicted in a large measure; there being a difference of but 4½% in the death-rate in favor of the lumbar operation as compared with the abdominal, that of the former being 27% and of the latter 31% plus.

If, however, the complicated cases are separated from the uncomplicated in both the lumbar and abdominal operations, and compared respectively, the following facts appear:

There are but 11 complicated cases out of the 81 lumbar operations, and 7, or 63% of them, died, whereas there were 33 complicated cases out of the total number of 44 abdominal operations, and of these but 12, or 36%, died.

In other words, there were three times as many complicated cases treated by the abdominal operation as by the lumbar, and only about half as large a percentage of the former died as did of the latter.

The showing of the results of nephrectomies for *various renal conditions*, presented in Schmieden's article for a much larger number of cases, is very instructive in certain respects, as well as very hopeful, the latter because of the remarkable decline in the death-rate attending both the lumbar and abdominal methods during the last thirty years, as demonstrated by a comparison of them in three successive periods of ten years each, 1870–1900, inclusive. This is as follows:

The total number of nephrectomies was 1,118, collected from various sources.

This number is classified as follows:

Total number of cases, 1,118; deaths, 301; mortality, 26.9%.

	Recoveries.		*Deaths.*	
1st ten years,	40	or 49.4%.	41	or 50.6%
2d " "	319	" 66%.	164	" 34.0%
3d " "	458	" 82.6%	96	" 17.4%

LUMBAR OPERATIONS.

	Recoveries.	*Deaths.*	
1st ten years,	23	18, or mort. p. c. of	43.9%
2d " "	231	85, " "	26.9%
3d " "	303	62, " "	17.0%
Total number	722. 557	165	22.9%

ABDOMINAL OPERATIONS.

	Recoveries.	*Deaths.*	
1st ten years,	18	22, or mort. p. c.	55.0%
2d " "	83	77, " "	48.1%
3d " "	133	32, " "	19.4%
Total number	365. 234	131	35.6%

The above figures show the following details: First, the remarkable diminution of the death-rate for both methods, during the thirty years,—in the lumbar operation of 26.9 %, and in the abdominal of 35.6%. Next, the steady gain in the successive periods in the recovery percentage of the abdominal operation, as compared with the lumbar, the difference in favor of the latter in the first ten years being 11.1% and in the last ten years but 2.4%.

ADDENDA.

It is impossible to give a full bibliographical list of the somewhat more than 600 writers whose works or reports of cases have been studied in detail by the author while preparing this paper, but in order to save labor for those who may wish to consult the literature of the subject a list of the more important *series* of cases and writings published up to the present time is herewith appended alphabetically. In this list are included all but 103 cases of the total 660 comprising the whole series collected by the author, these 103 being made up of the 25 hitherto unpublished cases, and 78 individually reported ones found by the author in the literature.

Albarran.
Bloch, 1873. 40 cases.
Cerou. 8 cases of anuria. Thesis. (Quoted by Morris.)
Davis, 1902. 23 cases. (Annals of Surgery, Philadelphia, vol. xxxvi, No. 3, p. 346.)
Dodge, 1902. 9 cases. (Annals of Surgery, Philadelphia, vol. xxxvi, p. 897–920.)
Delbet, 1901. 320 cases. (Ann. des Mal. des Org. genit.-urin., vol. xix, p. 669–805.)
Dolgoff, 1900. (N. Y. Med. Journ., lxxii, p. 871.) Experiments.
Edler, 1887. 152 cases.
Goldstein, 1902. 20 cases. (Deutsch. Zeitschr. f. Chir., Leipzig, vol. lxv, p. 87–98.)
Guterbrock. 1895. 35 cases. (Autopsies, with relation to frequency. See Morris.)
Hohlbeck, 1898. 14 cases. (St Peters. Med. Woch., N. F., xv, p. 449–452.)
Grawitz, 1888. (Arch. f. klin. Chir., Bd. xxxviii, p. 436.)
Johnson, 1898. 7 cases. (Annals of Surgery, Philadelphia, vol. xxxvii, p. 774.)
Keen, 1896. 118 cases. (Annals of Surgery, Philadelphia, vol. xxiv, p. 138–181.)
Küster, 1896. 306 cases. (Deutsche Chir. Lieferung, 52b, S. 196, 1896.) 1895. (The mechanism of the injury. Arch. f. klin. Chir., Berlin, vol. l, p. 676–686.)
Maas, 1878. 71 cases. (Deut. Zeit. f. Chir., Bd. x, p. 126.)
Morris, 1901. (Surgical diseases of the kidney and ureter.)
Obalinski, 1891. (Samml. klin. Vortragé, [Volkmann's], Leipzig, N. F. 16.)
Petroff, 1901. (Thesis, Lyons, A. Storck & Co., Publishers. On intraperitoneal ruptures of the kidney.)
Quervain, 1901–1902. On intraperitoneal ruptures. (Deutsche Zeitschr. f. Chir., vol. 62, p. 58.)
Schmieden, 1901–1902. 36 cases. (Deutsche Zeitschr. f. Chir., vol. 62, p. 205.)
St. Thomas Hosp. Rep. 27 cases.
Tuffier, 1899. 198 cases. (Duplay et Reclus, Surgery.)
Wagner, 1900. 27 cases. (Schmidt's Jahrb., Leipzig, vol. cclxvi, p. 90.)
Waldvogel, 1902. 20 cases. (Deutsche Zeitschr. f. Chir., Leipzig, lxiv, p. 39.)
Wallis, F. C., 1897. 14 cases. (Trans. Clin. Soc., London, vol. xxx, p. 38.)
Wyss, 1901–1902. 14 cases. (Beitr. z. klin. Chir., Tubingen. xxxii, p. 242.)

Delbet's article in 1901 contains a summary of 320 cases; includes all of those published by Keen, Maas, Grawitz, Bloch, Obalinski, Wallis; also, almost all those of Küster and Tuffier, and of the series of Wagner's previous to that included in this article the theses of Foy, Moser, Ravel, Martin, Poireault, Gargam, Sladowski, Pean, Pfeiffer and Bidault.

In my own compilation I have included such cases prior to 1901 as were not included by Delbet in his series, and all that were accessible to me published between Delbet's article, 1901, to the present time, June, 1903, to the number of 340, which, added to those of Delbet, makes a total of 660, comprising the whole series.

Clinical Department.

CLINICAL MEETING OF THE STAFF OF THE MASSACHUSETTS GENERAL HOSPITAL, FEB. 20, 1903.

INSULAR SCLEROSIS; CHARCOT JOINTS.

DR. J. J. PUTNAM showed patients illustrating these conditions. The two patients whom I am about to demonstrate, illustrate some of the difficulties in the diagnosis of insular sclerosis. This is a matter which has been attracting a good deal of attention of late years and about which neurologists have by no means come to a definite conclusion. A paper published recently by a German observer gives it as the author's opinion that there are more than twenty different diseases with which this one might be more or less easily confounded.

This difficulty is due, of course, in great measure to the fact that the arrangement of the areas of disease seems to be entirely independent of any special distribution of nerve tracts in the central nervous system, and also independent of vascular areas; furthermore, the nerve elements themselves within the limits of the morbid change are damaged but not destroyed, and on this account we are liable to get clinical pictures which suggest disorders of function rather than actual loss of function of the parts disturbed.

Not only is this disease difficult of diagnosis, but the frequency of its occurrence seems to vary according to locality, although of course it may be that the latter fact is only apparent and is in reality dependent upon the former. In our clinic we have hitherto seen only a very few cases, whereas in Edinburgh vastly greater numbers are reported (by Dr. Bramwell).

At the present moment three patients are in attendance on the clinic who show the signs of the disorder in a fairly typical form, and yet even in these cases the diagnosis has to be made by putting all the evidence together rather than by the presence in a pathognomonic form of the various characteristic signs, of which the scanning speech, the intention tremor and the nystagmus are among the most striking.

The first patient to whom I call your attention has a tremor, which on the whole increases in proportion to his muscular efforts, and which is present in slight degree even when the patient is apparently at rest, as so often happens. This patient shows no scanning speech and no nystagmus, but on the other hand he has a well-marked atrophy of his left optic nerve and his enunciation is slightly drawling in character. His memory is also poor and his hearing on one side for air and bone conduction is markedly affected. Most of these symptoms date back only for two or three years, but he says that when he was a young man he and his friends used sometimes to take turns in shaving each other, but they were usually unwilling to have him act as barber because his hand used to shake.

The second patient, a young man of a little more than twenty, has a tremor which could hardly be called "intentional" by any stretch of definition. It is really a fine oscillation hardly distinguishable from that which is due to toxic conditions, or that which occurs at a constitutional neurosis. His speech is perhaps rather slow and a little dragging, but not characteristic. On the other hand, he has a well-marked nystagmus, noticeable even when the eyes are directed forward.

Finally, I will pass around some striking sections made by Dr. E. W. Taylor and Dr. G. A. Waterman, from the spinal cords of two other patients. These are interesting partly because one of these postmortems, which was done some years ago, was among the first made in this country, a fact which seems to bear out my statement that the disease is comparatively rare among us. The diagnosis in both of these cases was a matter of doubt. In one of them, although it was considered as not improbable that this disease was present, it was also believed that the case might be one of glioma of the pons. The other patient exhibited in the course of her illness a great variety of morbid signs and symptoms, quite sufficient, as I now think, to have established the diagnosis. Nevertheless, for some years before her death she was in a condition of well-marked spastic paralysis, which confined her to her bed and chair, and threw all other symptoms into the shade. This case is interesting from another point of view. It has, namely, been recognized that one of the diseases for which insular sclerosis may be mistaken is hysteria, and that diagnosis suggested itself several times to persons who examined this patient during the early part of her illness. At one period, when she was so much paralyzed and her muscles so rigid that she was ordinarily unable to walk alone, she several times walked across the floor in a somnambulistic condition, to the occurrence of which she was subject. The truth is that hysterical manifestations not infrequently are superadded to the other symptoms in this affection, apparently in consequence of the damage to the nerve elements of the brain and pons, to which I have above alluded.

The other two patients are affected with tabes, and exhibit the so-called Charcot's joint in its most typical form. (Radiographs illustrating the conditions present were here shown.) In one case it is the knee that is affected, in the other the hip. In the latter it is evident from the physical examination that either the head of the femur is entirely out of joint or else that it is lacking altogether. In fact, the radiograph shows the latter to be the case.

DR. ARTHUR K. STONE first showed

TWO CASES OF ANEURISM.

CASE I. *Aneurism of the aorta* — (by permission of Dr. Fitz).

The patient is a Scotchman, age sixty-two, and a carpet-layer by occupation. He denies all venereal history, and there is nothing in his past history which bears upon the present condition. Hoarseness was noticed first about a year ago. This came on suddenly and later let up for a time, only to return again. For the past three months there has been marked hoarseness and persistent coughing, rasping in character. A few weeks ago there was some pain on swallowing.

Patient is very thin; chest appeared generally resonant on percussion, and auscultation showed diffuse dry râles, and heart area and sounds practically normal. Examination of the larynx by Dr. Cobb showed a paralysis of the left vocal cord. Re-examination in the light of this finding showed the apex in fifth interspace, one-half inch within the nipple line or three and one-half inches from the mid-sternal line. The right border was to be made out three fourths of an inch to the right of the median line. Sounds regular and normal, excepting the second aortic, which was increased.

There was no pulsation in the neck; there was no trachial tug. The pulse at the wrists was very nearly equal. Later it was decided that the left was weaker. Blood pressure taken by Dr. R. C. Cabot showed that the presure in the left arm was slightly greater than in the right. Both chests hyper-resonant, excepting directly over the sternum at level of second rib there was a small dull area. Respiration behind high pitched, and over an area about three inches in diameter the breathing was bronchial in character. Heavy percussion over the upper portion of the hyper-resonant left chest showed some dullness above and below the second rib to the left of the sternum, but the bounds were indefinite.

The impression given by the examination even after knowing that there was paralysis of the left vocal cord was that there was probably a slight dilatation of the arch of the aorta, which had taken place just at the point where it had involved the recurrent laryngeal nerve. The fluoroscopic examination of the chest showed a round, pulsating shadow. Extending from the first rib to the fourth rib at a point an inch above the nipple, it extends three inches to the left from the mid-sternal line, an aneurism with a shadow nearly five inches in diameter.

Without the aid of the x-rays no one would have been able to have given a correct estimation of the size of the aneurism present.

(X-ray plate and the man were shown, and percussion attempted by many of the physicians present.)

CASE II. *Aneurism of the sub-clavian and embolus of the brachial artery.*

The patient was a powerful man of thirty-two years of age, a freight handler by occupation. He denied all venereal disease and excess of alcohol. He had always considered himself well till about a week before, when, during breakfast, his right hand suddenly became numb, and he found that he could not grasp as well as with his other hand. Later he noticed that his right hand and forearm were colder than the left. He was referred to the medical room from the nerve room. There was a small fusiform aneurism in the right subclavian artery, with pulsation to be seen and felt above the clavicle and outside of the insertion of the sterno-cleido-mastoid muscle; the size is, roughly, about one inch by two inches. No pulse was to be felt in the right wrist, nor anywhere in the forearm until the elbow was passed; here the beats were well marked once more. The right hand and forearm felt colder to the touch than the left, and the surface thermometer registered 83° on the right and 88° on the left. Sensation in the right hand was normal. Examination of the other organs of the body showed nothing abnormal. Evidently there had been an embolus set free from the aneurism, which had lodged in the brachial artery at its branching into the radial and ulnar arteries. The advice of the surgeons as to the desirability of operation was asked.

The two cases next presented by Dr. Stone demonstrated the well-known fact that specific disease frequently simulates new growth, and that in apparently most unfavorable conditions potassic iodide may yield unexpected results.

SPECIFIC DISEASE SIMULATING NEW GROWTH.

CASE I. *Multiple Tumors at the Elbow and on the Sternum.*

The patient was a slaughter-house workman twenty-eight years old. He had had a sore on his penis seven years before, which was not followed by any secondary manifestations.

He had been well till about one year ago, when he began to have pain and ache across his shoulders. Movements of the arms became painful. A swelling appeared at the inner side of the left elbow which increased in size and gradually became a purple red color.

Examination showed the internal organs apparently normal in condition. The patient, however, looked wretched and sick, and had a temperature of 101° F. There was a dark purple swelling over the inner condyle of the left humerus about two inches in length and an inch in breadth. The swelling was tender, there was some limitation of motion of the elbow, and apparently the swelling was attached to the bone. (No x-ray was taken, as the patient seemed so sick that he was sent at once to the house.) Over the sternum there were three slightly-raised semi-fluctuant reddish nodules of about one-half inch in diameter, and the insertion of the sterno-cleido-mastoid was thickened. All of these nodules were tender. There was also tenderness over both acromial processes, particularly the left. The general appearance of the man, and the position of the tumor, made it seem probable that the process was that of a sarcoma of the arm with secondary deposits in the sternum. The fact that there had been a chance of the introduction of syphilis seven years before, although unsupported

by any history of secondary manifestations, indicated anti-specific treatment. It chanced that the hospital was full when he applied for admission, and when the patient returned for entrance at the end of a week the improvement that he had made under specific treatment made it unnecessary that he should enter the wards. At the end of two weeks there was no trace of the tumors on the sternum, the pains had all disappeared, and he was able soon afterwards to go back to work. He is still upon potassic iodide, and the tumor over the condyle can be made out with difficulty. The skin over the tumor has returned to its normal color.

CASE II. *Enlarged nodular liver.*

The patient is an Italian, forty years of age. Little could be made out of his history except that he had "rheumatism" fifteen years ago. No venereal history was obtained and no scars found upon his penis. He has a family of seven very healthy children. He has used both alcohol and tobacco in great abundance. About six months ago there was some blood in the stools. This was probably bright blood, as I do not believe that tarry stools were meant or described. Two months ago he noticed a lump in the upper part of the abdomen, with moderate general pain. For the previous two weeks there had been blood in the stools, great general weakness, though the appetite and digestion were both good. There was and had been no jaundice. He looked sick and very dull and heavy.

Examination showed slight arteriosclerosis. The lungs were normal. The heart, though not enlarged, had a soft systolic murmur at the apex transmitted to the axilla and a slight accentuation of the second pulmonic sound. The whole upper portion of the abdomen between the arch of the ribs looked full, and was resistant and boardlike on palpation. The liver dullness extended from the sixth space on the right to 4 cm. below the costal border and continuous across to the left costal border. The edge, however, was not to be palpated. The spleen was just to be felt below the costal border. Below the zyphoid and just to the right of the median line, and apparently in the mass of the enlarged liver, were two nodules, the larger 1.5 cm. in diameter, which descended on respiration together with the mass beneath. The urine was normal and a stained specimen of blood showed only a slight leucocytosis. The appearance of the man, the enlarged and nodular liver in spite of the absence of jaundice and stomatic disturbance, made carcinoma seem the probable eventual diagnosis. Anti-specific treatment, however, made him return within a week, smiling, and feeling much better. The nodules were less easily palpated. A week later, and the nodules were not to be made out. The patient was feeling well, there was no pain and he felt able to return to work. Examination still shows a much enlarged liver, though the boardlike condition of the upper abdomen has partly disappeared. Certainly there has been a most marked amelioration of the symptoms in the few weeks' treatment. My experience has been that when new growths yield to so-called anti-specific treatment they do so within a short time and to moderate doses of the iodide.

(To be continued.)

Medical Progress.

REPORT ON DERMATOLOGY.

JOHN T. BOWEN, M.D., BOSTON.

THE RELATIONSHIP OF ERYTHEMA MULTIFORME AND LUPUS ERYTHEMATOSUS TO GENERAL TOXEMIA.

GALLOWAY and McLeod[1] report several interesting cases of this association. The first case was that of a woman of twenty-one, who entered the hospital suffering from a severe dermatitis of the face, hands and feet, accompanied by some fever. There were symmetrical red patches on the cheeks, which met across the nose and extended down to the chin. There were some red patches also behind the ears. There was considerable exudation from these areas, with crusts and desquamation. There were also erythematous areas on the backs of the hands and feet. There was some tendency to ulceration about the nails. Small erythematous lesions were also present on the forearms. On the feet and ankles the eruption was multiform, beginning with erythematous patches which tended to form vesicles or bullæ, and finally to crust or ulcerate. The gums and mucous membrane of the mouth were also affected. The urine was small in amount, of specific gravity 1.021; alkaline reaction; urea, 3 %; albumen 3 %; deposit of urates and epithelial, hyaline, and finely granular casts. The patient remained in the hospital until her death in a little less than a month, during which time she continued to have considerable fever of a remittent type. The blood was examined several times with negative results. At the autopsy it was found that the patient had evidently died from nephritis. The microscopical examination of a piece of skin excised from the right hand showed in the corium the usual signs of an acute inflammation of the skin. The epidermis showed definite changes. The Malpighian layer was edematous throughout; and in one or two places there was vesicular formation. There was also a reticulation in places. There was also a condition of parakeratosis present. The writers looked upon this as an exceptionally severe erythema multiforme, the result of toxemia produced by the disease. They had some difficulty in excluding an acute generalized lupus erythematosus.

The second case was considered without doubt an acute form of lupus erythematosus, with a close resemblance to erythema multiforme. The patient was a woman of thirty-six, who presented patches of erythema on the face, hands and arms. They were specially pronounced on the backs of the hands, and there were also lesions on the fingers. There was slight superficial atrophy of the skin in areas previously occupied by the disease. She had a continuous rise of temperature. After a time the skin lesions improved greatly, many of the areas disappearing entirely. The improvement continued for some months, when she was again admitted to the hospital in a condition somewhat similar to that previously described. It was discovered then that she was addicted to frequent fits of alcoholism, and developed a cirrhosis of the liver. She left the hospital, but died a few weeks later.

In comparing the two cases, their striking clini-

[1] Brit. Journ. of Dermatol., March, 1903.

cal resemblance is a noteworthy feature. In both cases there was a general toxemia of intense grade. In the one case a virulent toxin circulating in the blood caused an acute inflammatory disturbance in the skin; while in the other case alcohol is looked upon as the toxic element, which gave rise to a more chronic form of dermatitis.

THE URINARY CONSTITUENTS IN PSORIASIS.

Von Zumbusch[2] examined twenty-one cases with reference to the excretion of nitrogenous constituents and of uric acid. He notes that a number of observers, especially in England, have considered that there is a connection between psoriasis and uric acid diathesis. In fact psoriasis has been by some called gout of the skin, and the urinary analysis has been brought forward as a proof of this.

Others have declared that there was a relationship between psoriasis and diabetes, and numerous observers have described the urea and uric acid as increased in this disease. It is to be noted, however, that exactly opposite statements are made by other observers. The twenty-one cases examined by Von Zumbusch were all males, and were taken at varying stages of the affection. No internal medicine had been given before the investigation in any case. The cases are related quite fully, and the table of the results of the examination is appended. The result of this examination was a completely negative one, that is to say, it was found that the total nitrogenous constituents and the uric acid had not varied at all in amount from what we find in health. Furthermore, the quantity and specific gravity varied in no way from the normal. No relationship was found to exist between the severity of the disease and the contents of the urine.

MULTIPLE SPONTANEOUS KELOID.[3]

The conclusions of this article, which consists of a careful survey of the literature and report of a typical case, are as follows:

(1) By the name "keloid" is understood a special affection of the skin which, in many respects, resembles a neoplasm, and which, for the present at least, is to be included among the fibromata.

(2) Only the so-called primary and secondary keloids belong to the keloid group. The hypertrophied scar must be sharply separated from them.

(3) Both the clinical and the histological appearances prove that the division of keloids into primary and secondary has no justification, as both of these kinds of keloid are developed according to the same type of scar process. Nevertheless, such a division may be retained on clinical grounds.

(4) The histological changes in keloid are produced by an increased growth of connective tissue, with simultaneous disappearance of the elastic tissue along the course of the blood vessels.

(5) The histological differences between primary and secondary keloids, which were formerly accepted (especially the retention of the papillary layer in true and its disappearance in false), can no longer be considered valid.

(6) The etiology must be regarded as obscure.

(7) As chief cause of the development of keloid, a particular personal, family or race disposition must be assumed whereby the skin reacts to often slight irritation by the formation of keloid. In this way the tendency of keloids to recurrence is explained.

(8) The vascular system unquestionably plays a prominent part in the development of keloid.

(9) Keloid is neither a scar nor a simple hyperplasia of the connective tissue, and differs also in its formation from the infectious granuloma and fibromata, although its exact classification is at the present moment impossible.

(10) The cause of the spontaneous cessation of the growth of keloids is unknown.

(11) The prognosis of keloids is, in general, unfavorable.

(12) The treatment of keloids demands much time and is, on the whole, a rather thankless task.

A CASE OF SYSTEMIC BLASTOMYCOSIS.

Ormsby and Miller[4] report a case of this disease from the laboratory of Drs. Hyde and Montgomery in Chicago. The patient was a Swede, fifty-six years old, a machinist. He had never been very strong, and for years had lived over a stable, where the odor was at times almost unbearable. The first evidence of the illness which ended fatally was in the lungs, and made its appearance about eight months before his death. Two months later a lesion appeared on the skin of the outer part of the right thigh, which ulcerated and discharged. A month later another lesion developed on the right side of the nose. At this time he was pale, emaciated and anemic. There were also at this time several subcutaneous nodules; the temperature varied from 100° in the morning to 103° in the evening. Physical examination of the lungs showed bronchial breathing and other signs of pulmonary disease. From the subcutaneous abscesses pure cultures of blastomycetes were obtained before death, and from a considerable number of tissues and internal organs postmortem. Only one of the lesions assumed the usual characteristics of this disease; but this fact was owing to the rapidity of the process, in all probability. The lesions continued to increase in number, and at the time of his death the body was practically covered with lesions, varying from small superficial crusted ones on the face to ulcers of a large size on the extremities. He was treated with Koch's new tuberculin without reaction. Postmortem examination showed the lesions completely filled with miliary abcesses and tuberclelike nodules. The pleura were filled with nodules. The liver was extensively filled with miliary abcesses and nodules. The kidney was also affected, but not so extensively. The spleen was extensively affected so that some parts of it were practically destroyed. The mesentery was filled with nodules. In all these organs blastomycetes were demonstrated, both by the microscope and by cultures, in many cases existing in the form of a practically pure culture. Repeated examinations of these various tissues for tubercle bacilli were negative. Especial attention was given to

[2] Zeitschr. f. Heilkunde, 1902.
[3] Tschlenow: Dermatol. Zeitschr., April, 1903.
[4] Journ. of Cutaneous Dis., March, 1903.

this point, as the symptoms would suggest tuberculosis of the lungs. Guinea pigs were inoculated with the tissue, but none developed tuberculosis. The microscopical examination of the skin lesions showed that the lower part of the corium had been invaded in some places; but most of the infiltration was confined to the subcutaneous tissue. This infiltration was made up of enormous numbers of the organisms, together with leucocytes, red blood cells, plasma cells, mast cells and giant cells. In many instances the organisms were seen in giant cells. Numerous budding forms were everywhere seen.

The writers conclude that although the early lung involvement and other symptoms, such as the laryngitis and the microscopic appearance of the organs, all suggested tuberculosis, the latter affection may be ruled out by the absence of the tubercle bacilli, culturally, miscropically and experimentally, by the negative tuberculin reaction, the absence of the usual microscopic structure, the failure to produce tuberculosis in animals, the large number and rapid evolution of the skin lesions and the abundance of blastomycetes found in each lesion.

BLASTOMYCOSIS IN ENGLAND.

Sequeira[5] reports the first case of this affection in England, although he admits that his case differs from those described in America in many particulars, and that possibly the organism found may be of a different species.

The patient was a strong, healthy man of thirty-seven, who had never lived out of England. At one time he was employed at a brewery and had had a good deal to do with cattle. A little over a year previously he had noticed a small white spot, the size of a pin's head, just below the inner canthus of the left eye, which had increased and spread inwards. About five months after the first lesion appeared, a precisely similar one was noticed below the right eye, which had also progressed in the same manner until the lower lid was so much swollen that vision became difficult. Several other similar lesions appeared in the vicinity. A stained specimen of the discharge from one of the tumors showed the presence of yeastlike bodies. The patient was put upon iodide of potash in 5 and later in 10 gr. doses. There was little improvement until the drug had been increased to 105 gr. a day, when the lesions began to diminish rapidly. Ultimately the lesion under the left eye almost completely disappeared, while that under the right eye was less than half its original size. The patient was then lost track of.

Microscopically, there was found to be a great increase in the epidermal layer; the horny layer was thickened in places and contained numerous small abcesses; the deeper layers of the epidermis were thickened, and there was considerable down growth into the corium. In the corium there was a considerable infiltration of round cells; and in some of the sections there were giant cells. The yeastlike bodies were visible in the abcess cavities. The pus that was squeezed out from one of the growths showed pus cells, a few eosinophiles, a large number of cocci and yeastlike bodies. They were ovoid, with a well-defined margin and a double contour. They were seen both singly and in pairs, and in some the formation of buds was well marked, and in some instances there was a short chain formation. Unfortunately the organisms could not be cultivated, which he regards as due to the fact that the lesions examined were already infected with cocci. The organism found in this case is much smaller than those found in the American cases. He bases his diagnosis of blastomycosis on the fact that the face and scalp alone were affected, that the lesions were multiple and fresh lesions appeared apparently by innoculation, that the edges were well defined, with but little infiltration, and that they soon became pustular. Furthermore, there were numerous minute abscesses which were discovered under the microscope, which contained budding, yeastlike organisms. The fact that the deeper layer of the epidermis extended downward into the corium and that the growths were much influenced by large doses of iodide of potash also tends to strengthen the diagnosis.

[5] Brit. Journ. of Dermatol., April, 1903.

LIGHT TREATMENT IN LUPUS.

Morris[6] begins with a résumé of the principles on which the Finsen method is based, namely, that light acts as a stimulant of organic life, which has been proved by experiments on the movements of animals; that this stimulating property has been shown to exist generally in the actinic or chemical rays of light; also that the chemical rays have the property of causing inflammation of the skin, as dermatitis from the sun and from electric lights has been proved to be caused by the actinic rays. It has also been proved that light has bactericidal properties, and that this increases in direct proportion to the degree of concentration of the rays. It has also been shown that light can penetrate the skin. With regard to lupus, Finsen's method has become a well-established method of treatment in most parts of Europe. In Finsen's latest statistics he claims 94% of successes and only 6% of failures. These statistics are more favorable than those from most other sources. Favorable results have also been reported in lupus erythematosus, alopecia areata, and in epithelioma.

Turning now to his own results, Morris asserts that while not so brilliant as those of Finsen, they have been satisfactory in a considerable number of the cases of lupus so treated. The larger part of the more extensive cases are still under treatment, and require a short course of treatment from time to time when new nodules make their appearance. In most of the cases in which a complete cure is claimed the diseased area has been of small extent. In the severe cases treated it is asserted that relapses are becoming fewer and the interval between them much longer. Of 65 cases of lupus, 11 have remained without relapse for from six months to two years. In 10 favorable cases of small extent, he thinks himself justified in saying that there has been a complete cure. In two cases in which there was extensive ulceration, the Finsen method proved useless; while in both there was rapid healing under the x-rays. A number of cases in which the disease was in the mucous membranes responded favorably to the Finsen treatment. Of 11 cases of lupus erythematosus

[6] The Practitioner, April, 1903.

there was great improvement in 7; in 1 there was a speedy relapse as soon as the treatment stopped. Of 27 cases of rodent ulcer favorable results are reported in 15. In most of these, however, the x-ray treatment was combined with that of Finsen. Relapse shave, however, occurred in most of them.

Morris asserts that it is better to restrict the term "Finsen light" to the particular way in which he applies the treatment, which differs from other methods in concentrating or focusing the rays before they reach the skin. It is on this principle that the original Finsen lamp is constructed; and according to Finsen, concentration is necessary in order to obtain the full effect of the light. In the French lamp of Lortet and Genoud there is no such focusing, and hence the penetration of the light is not so great. Morris thinks that the original Finsen lamp gives the best results on account of the greater intensity and penetrating power of the concentrated light. Among the disadvantages of this mode of treatment may be enumerated the great length of time required, the tediousness of the treatment for one hour daily, the occasional pain and the expense. Its advantages, however, are its excellent cosmetic results and its trustworthiness, as improvement may be expected in all cases, provided sufficient time is allowed. Under unfavorable conditions may be mentioned excess of pigment and thickness of the skin, great depth of the disease, scarring from previous treatment and great vascularity of the parts. The light treatment may also with advantage be combined with other methods, such as the x-ray; and where the disease is very extensive or there is much infiltration, curetting should be applied first.

Morris then relates five cases in which this method was employed, giving photographs of the patients both before and after treatment. In some of them the x-rays were used in combination.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

SEVENTEENTH ANNUAL MEETING, HELD IN WASHINGTON, D.C., MAY 12, 13 AND 14, 1903.

LOUIS A. WEIGEL, M.D., of Rochester, N. Y., President.

FIRST DAY.—TUESDAY, MAY 12.

EXCISION OF THE KNEE FOR BONE ANCHYLOSIS. REPORT OF A CASE.

DR. A. J. STEELE of St. Louis reported this case, one in which cuneiform osteotomy had been done. It was necessary to sacrifice the femoral epiphysis, but good osseous union was obtained. Nails were used in the first instance to secure proper fixation of the bones, and subsequently a well-fitted leather case.

DR. JOEL E. GOLDTHWAIT of Boston reported a series of similar cases, all of which had been treated by a wedge-shaped exsection. In these cases much difficulty had been experienced in maintaining a good circulation when the limb was straightened, apparently because of implication of the vessels in cicatricial tissue. In one case the circulation became so impaired that gangrene rapidly developed, necessitating an amputation.

DR. A. J. GILLETTE of St. Paul said that according to his experience, anchylosis in cases of tuberculous disease of the knee was rare. With forcible correction he found no occasion for tenotomy.

THE ABUSE OF FLAT-FOOT SUPPORTS.

DR. W. R. TOWNSEND of New York presented this paper. He called attention to the general increase in the use of flat-foot supports, partly owing, no doubt, to free advertising in the lay press and the sale of such supports in department, shoe and instrument stores. This general interest in the subject would be gratifying were it not for the present tendency to ignore the necessity for a correct diagnosis in cases of flat foot before applying such support. A support was not always required even though flat-foot were present; moreover, the existence of extreme spasm, deformity or inflammatory conditions might make the use of a support worse than useless. Many of the supports sold were so flimsy as to be utterly incapable of giving support, and not infrequently the support was applied so far forward or backward as to have no effect in preventing deformity; indeed, it often caused deformity and disability. He wished to specially emphasize the impossibility of treating all cases of flat foot in a routine way by ready-made supports and without skilled advice and supervision.

DR. GOLDTHWAIT called attention to a class of cases of rigid or extreme valgus which had proved obstinate to treatment by flat-foot plates. Quite recently he had learned to recognize these cases as examples of talipes valgus instead of varus, and they had responded readily to treatment for valgus, that is, excision of the scaphoid and shortening of the inner side of the foot, followed by correction.

THE SURGICAL PATHOLOGY OF GENU VARUM AND GENU VALGUM.

DR. WALLACE BLANCHARD of Chicago read this paper. He said that the skiagraphic observation of genu varum usually showed three contributing curves, which, in the order of their development, were: (1) An exaggeration of the normal out-curve of the lower part of the femur; (2) an outward bending of the upper part of the tibia; and (3) distributed outward bend of the shaft of the tibia. The curve in the upper part of the tibia generally became most pronounced. The least over-correction was required at the culminating point in order to give straight and lengthened legs. In genu valgum the primary inward bending was usually in the upper part of the tibia, and a succeeding inward curve became distributed through the shaft of the tibia. The least over-correction was required at the apex of the tibial deformity. Lorenz and Renier claimed that epiphysiolysis corrected by attacking the seat of the deformity in the condyles, but it had been shown that the operation was founded on a pathological error. Several of Renier's illustrations showed opening of outer knee articulations without indications of separation of the epiphyses or of fractures, and the result was apparently the same as in Lorenz' recently discarded operation of over-stretching of the external hamstring tendon.

In the operations of this kind that he had done there had been so much reaction that he had not felt justified in continuing to practise it. His own method of rapid osteoclasis he considered decidedly superior, and that either this or osteotomy should be preferred to epiphysiolysis.

THE MECHANICAL VERSUS THE OPERATIVE TREATMENT OF RACHITIC DEFORMITIES OF THE LOWER EXTREMITIES. A STATISTICAL REVIEW.

DR. R. TUNSTALL TAYLOR of Baltimore was the author of this paper. To show the superiority of operative treatment he quoted their statistics, that is, 109 cases with only two relapses and one over-correction. In this connection he exhibited a very ingenious, and apparently effective, osteoclast that he had devised. The distinguishing feature was that it worked on the lever principle, and was constructed to give very rapid and accurate results.

DR. AUGUSTUS THORNDIKE of Boston remarked that the new instrument impressed him favorably because it appeared to imitate closely the natural process of producing a fracture.

DR. JOHN RIDLON of Chicago, from the standpoint of one who had invented and had used a similar device, suggested that a round or elliptical bar be substituted for the flat one, and that if the leather covering were discarded, and bare, polished metal bars be used, there would be less danger of lacerating the skin.

DR. HENRY LING TAYLOR of New York called attention to the twist of the shaft of the tibia occurring in most cases of bow-legs, and advised that, in operating, one should give the lower fragment a strong outward twist.

THE TREATMENT OF PARALYTIC TALIPES BY TENDON TRANSPLANTATION SUPPLEMENTED BY OTHER OPERATIVE PROCEDURES.

DR. ROYAL WHITMAN of New York presented this paper. He said that the results of the operation of tendon transplantation at present were unsatisfactory, the favorable effects of the operation often being only temporary. This was often due to the correction of deformity and the removal of a deforming force rather than to a permanent gain in muscular power. Simple operations, in which both the positive and negative effects of transference of muscular power could be utilized should be selected, and the attachment of transplanted tendons to those of the paralyzed muscles should be replaced by direct implantation at a point of election. Periosteal implantation was less effective than that to the bone itself. Secondary operations, such as arthrodesis of the mediotarsal joint for the prevention of varus or valgus deformity, and astragalectomy, were often indicated, or, indeed, imperatively demanded.

DR. J. E. GOLDTHWAIT said that by tendon transplantation it often became possible to make use of lighter braces. In some of these cases a double pull was established by reason of a cicatricial formation in the old sheath of the tendon.

ACUTE ATROPHY OF BONES AND JOINTS FOLLOWING COMPARATIVELY SLIGHT INJURIES.

DR. JOEL E. GOLDTHWAIT of Boston was the author of this paper. He said that slight injuries were often followed by long impairment of function of the affected part, and not infrequently by permanent disability. The active stage was characterized by subacute swelling, pain on motion, and, at times, by an appearance not very unlike a tubercular process or rheumatoid disease. X-ray examination showed general atrophy of the bones and joints of the part, thus explaining the permanent disability.

DR. WHITMAN remarked that as bone was living tissue, there was no need to invoke the action of the trophic nerves in order to explain the atrophy.

DR. STEWART L. MCCURDY of Pittsburg said that the atrophy was dependent upon a lesion of the sympathetic rather than of the cerebrospinal system.

DR. L. A. WEIGEL said that this atrophy, which was eccentric, could only be positively diagnosticated by the x-ray, but there was often a peculiar cadaveric coldness of the part which was quite characteristic.

EARLY OPERATIVE TREATMENT OF TUBERCULAR OSTEITIS OF THE KNEE.

DR. BERNARD BARTOW of Buffalo read this paper. He said that localization in the early stage was generally limited to the femoral epiphysis. The existence of an epiphyseal focus of disease could often be determined before the occurrence of joint infection, but when the joint had once become invaded excision should be substituted for protective treatment. In carrying out the early operative treatment, search should be made for the focus by trephining the condyle above the capsular attachment. When diseased tissues were found, they should be curetted away, the cavity treated with carbolic acid, iodine or chloride of zinc, and the operation wound closed by suture. Severe flexor contraction should be relieved by open division within the tendon sheaths, and fixation secured by plaster of Paris. After healing of the wounds locomotion might be allowed with the aid of crutches and a high shoe. If excision should be indicated at any time, it could, of course, be performed with the same chances of success as if the foregoing procedure had not been undertaken.

SECOND DAY. — WEDNESDAY, MAY 13.

SOME POINTS IN THE TREATMENT OF HIP JOINT DISEASE.

DR. GEORGE B. PACKARD of Denver read this paper. The author considered the time traction and fixation should be continued, for, he said, he had long been impressed with the retardation of growth incident to interference with functional use. The advantage of massage and protected use of the limb after the acute stage was passed was dwelt upon, and emphasis was laid upon the general treatment, particularly the dietetic. It was recommended that these children should have three substantial meals a day, and that each of these meals should be followed by a glass of milk and a raw egg.

OBSERVATIONS ON HIP DISEASE AS SEEN IN HOSPITAL OUT-PATIENTS.

DR. AUGUSTUS THORNDIKE of Boston was the author of this paper. While admitting the unsat-

isfactory character of out-patient treatment, the author insisted that the results obtained contrasted well with recent statistics on hip disease from abroad. An analysis was then given of 55 cases coming to the Children's Hospital Out-patient Clinic, nine, ten and eleven years ago. Of these 55 cases, 17 had the disease in the right and 36 in the left hip, while 2 were double. The first five years of life furnished 51.7%, the next five years 42.6% and the period between ten and twelve years of age 5.5%. The shortest duration of treatment was four years, and the longest treatment was now over eleven years. In all but six of the cases the Taylor long-traction splint was used. Prolonged recumbency was not employed. Abscesses were present in 42% of the cases, and in 3% of these abscesses were incised, curetted and drained. The average shortening amounted to 1⅓ inches. The results were considered good, although falling a little short of those achieved in some other hospitals in this country.

HIP DISEASE, CONSIDERED WITH SPECIAL REFERENCE TO THE COMBINED TREATMENT.

DR. R. TUNSTALL TAYLOR of Baltimore presented this communication as a continuation of the one presented a year ago. He reviewed the methods already advocated, and dwelt upon the great value of the skiagraphic diagnosis as contrasted with tuberculin, and upon the choice of cases, the method of disinfecting the joint after erasion and the subsequent treatment. Having lost one case from carbolic acid poisoning, he had substituted formalin for carbolic acid. A series of cases were reported upon, and the skiagraphs of the same exhibited; also two patients. The author was firmly convinced of the value of the *combined* treatment which he advocated, and believed that exploratory incisions would often clear up the diagnosis, serving to differentiate between septic and tuberculous conditions. The patients were kept in bed for six or eight weeks with traction in abduction, and were then allowed up and around for about one year with traction splint and high shoe. He thought Lorenz was right in his statement that Americans were inclined to overdo the restraint of the functional use of tuberculous joints. He was of the opinion that the x-ray would aid the surgeon in determining the proper time for tentatively allowing functional use.

DR. BERNARD BARTOW of Buffalo, in opening the discussion on the foregoing papers, said that, while good climatic conditions were of advantage, it should not be forgotten that perfect fixation was essential to success. He strongly indorsed the line of treatment advocated in the paper of Dr. Taylor.

SIR WILLIAM HINGSTON of Montreal was also thoroughly in favor of early operation, having been long convinced that the treatment of a child for an indefinitely long period by extension was an error.

DR. G. G. DAVIS of Philadelphia said that he had frequently made a number of small trephine openings in the head of the bone in cases of acute tuberculosis of that part, and while this had cut short the acute symptoms, and in a number of instances had apparently been completely successful, yet in time the symptoms had reappeared, emphasizing once more the truth of the old doctrine that, in this disease, it was necessary to rely largely upon rest to effect a cure.

DR. V. P. GIBNEY of New York advocated cutting down upon the points of infiltration, evacuating their contents and suturing the wound without drainage and without the use of chemical agents. A skin-fitting plaster bandage and an ice bag should then be applied, and the child kept at rest for several days. The subsequent progress of the case could be followed by skiagraphs, and in this way a useful guide obtained as to the amount and duration of the traction.

DR. NEWTON M. SHAFFER of New York said that the initial limp was the danger signal, and at all times weight-bearing was the true test of whether or not it was safe to discard apparatus. When in doubt, it was safer to err on the side of the too prolonged use of apparatus.

DR. CLARENCE L. STARR of Toronto said that two or three years ago he had advocated early curettage, followed by swabbing with pure carbolic acid, and a continuance of this practice had not been attended by carbolic acid poisoning in any instance. The use of alcohol after the application of carbolic acid seemed to him to distinctly favor the absorption of the acid, by dissolving away the wall of coagulum first formed by the acid.

DR. E. H. BRADFORD of Boston objected to Dr. Taylor's recommendation that when there was much detritus the surgeon should cut down and remove it on the ground that the hip could not be treated the same as the knee or ankle. Experiments conducted in the pathological department of the Harvard Medical School had demonstrated the fact that the x-ray did not serve as a reliable guide to the limits of the disease.

DR. B. S. MCKENSIE of Toronto said that Dr. Taylor was working in the right direction, but should be cautious not to exceed the limits of true conservatism. In his own city the orthopedic surgeons had obtained the very best results from having their patients in the hospital kept in tents all the year.

DR. TAYLOR, in closing, pointed out that the anterior incision passed through the intermuscular septum down to the capsule, thus doing the minimum of damage to the tissues.

THE CORRECTION OF DEFORMITY AT THE HIP THE RESULT OF DISEASE. A STUDY OF THE BEST METHODS AND BEST POSITIONS.

DR. V. P. GIBNEY of New York presented a paper with this title. He raised the question as to whether the disturbance of the reparative process occasioned by forcible correction under an anesthetic might lead to a recurrence of the disease, and expressed the opinion that the Gant operation was the safest and most effective operation for appropriate cases. It was unsafe to resort to forcible correction where sinuses led down to the joint. It had been asserted that forcible correction caused the development of tuberculous meningitis, but available statistics did not seem to bear out this assertion. He was strongly of the opinion that osteotomy should be done by the subcutaneous method, and that the ability to sit comfortably should be sacrificed to the ability to stand and walk erect.

DR. A. J. STEELE of St. Louis cited a case in

support of the view that the use of extreme force in correction was liable to lead to the development of tuberculous meningitis.

DR. JOHN RIDLON of Chicago placed on record five cases operated upon last fall by the Lorenz method, in all of which the deformity had remained corrected and the extent of motion varied between 5° and 10°.

DR. J. E. GOLDTHWAIT placed on record sixteen cases, operated on during the past winter.

DR. NEWTON M. SHAFFER said that so many disastrous results had followed forcible correction in advanced cases that he was not yet convinced of the propriety of this procedure.

THE FORCIBLE REPOSITION OF CONGENITAL LUXATION OF THE HIP.

DR. C. G. DAVIS of Philadelphia read this paper. He expressed the opinion that the methods employed in the past had been unnecessarily severe, and it was desirable to follow more closely the original lines laid down by Paci. The use of the more recent methods had been accompanied by severe traumatism, paralyses and even death. It was obviously inappropriate to style a method "bloodless" which caused the formation of hematomata of such size as to extend from the middle of the thigh to the umbilicus. It was best to attempt the reposition by the gradual and careful manipulation advised by Paci, aided, if necessary, by the subcutaneous division of the adductors, and if this failed, instead of resorting to extreme force, employ weight extension in bed, with the limb abducted until reduction was possible without the use of excessive force. Or, it might be well in difficult cases to incise and clear a way for the head to enter the acetabulum.

CONGENITAL DISLOCATION OF THE HIP. REPORT OF A BLOODLESS REPOSITION FOLLOWED BY DEATH, WITH AN ANALYSIS OF TWENTY-THREE CASES IN PROCESS OF TREATMENT.

DRS. H. AUGUSTUS WILSON and J. TORRANCE RUGH of Philadelphia presented this paper, together with a pathological report by DR. W. M. L. COPLIN. The patient was a girl of seven years with a double congenital dislocation of the hip. She was in fair condition, and a radiograph showed conditions favorable for replacement. Reduction by the Lorenz "bloodless" method was undertaken at the Jefferson Medical College Hospital on March 18, 1903. All associated in the treatment of this case had been intimately connected with the eight cases reduced by Lorenz on Dec. 11 and 12, 1902. The fifth and sixth hips reduced by Lorenz were extremely difficult, but finally yielded to his experienced and skillful manipulations. Thirteen hips were subsequently reduced at the Jefferson Hospital, and two more outside. There were 12 girls and 5 boys, 6 being double. Of the single, 8 were right and 3 left. The youngest patient was twenty months; 6 were under two years; 2 were between two and three years; 5 were between three and four years of age; 5 were between six and seven years; 3 were between eight and nine years, and 2 were ten years old. In the case forming the subject of this report, a child of seven years had been under treatment elsewhere since the age of two years, and until within a few days of the operation. At the latter very great difficulty was encountered in reduction, far greater than in a boy of ten years with double dislocation. Complete, satisfactory reposition could not be obtained, and fixation in the "frog position" by means of plaster of Paris was done, intending to do a cutting operation later. The anesthesia lasted one hour and twenty minutes, and 3½ oz. of ether were consumed. Complete consciousness returned after the operation, only to be followed by a mild delirium, then collapse, which was partially recovered from, and eventually by death in twenty-two hours. The postmortem examination was performed by Dr. Coplin, who found that a long and large ligamentum teres more than filled the acetabulum, and was the cause of the failure in effecting reduction. The articulating surface of the head of the femur rested on the posterior and upper edge of the acetabulum; the capsule was elongated and thickened, and there was a fracture of the femoral neck, one of the body of the ischium and one of the ascending ramus of the ischium. The ends of all the bones were in close apposition. In addition, the pathologist found an acute catarrhal bronchitis, and acute catarrhal pneumonia and an acute diffuse hemorrhagic nephritis.

THE RESISTANCE OF TISSUES AS A FACTOR IN THE MANUAL REDUCTION OF CONGENITAL HIP DISLOCATIONS.

DR. E. H. BRADFORD of Boston presented this paper. He stated that the practical use of the method was limited by the surgeon's power and the strength of the resisting tissues. Variations in the surgeon's strength might be disregarded in estimating the problem, but the other factor was of great importance. The force necessary to tear the insertion of the tendo Achillis was often beyond the limits of practical surgery, and the danger in the use of great force on strongly resisting tissues was manifest in the irreducible cases of congenital hip dislocation. Tenotomy of the tendo Achillis was of recognized utility, and while tenotomy of the hamstrings and adductors had been used in these cases, the procedure did not possess great value. Lorenz' method for children between the ages of three and six was satisfactory. As a result of an anatomical study he had reached the conclusion that the chief resistance came from the strong tendon of the adductor magnus, and that this could be overcome by a tenotomy at some distance from the hip, thus rendering unnecessary the employment of great force. It was found that the lower fibers of the adductor magnus were collected together into a strong tendon, which could be readily divided. The chief factor in transposition was apparently the torsion of the femur.

(To be continued.)

FOOT AND MOUTH DISEASE. — It is reported that foot and mouth disease has been completely stamped out in Massachusetts, and it is probable that the quarantine will be completely raised within two weeks.

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SIGNED EDITORIALS.

AT the recent meeting of the American Medical Editors Association, held at New Orleans in May, Dr. T. D. Crothers of Hartford, Conn., read a paper in which he discussed the shortcomings of the editorial pages of our medical journals. Quoting the scepticism with which ether as a means of anesthesia was at first discussed by medical men through their journals and their frequent unjustifiable criticisms of work which later has been proved to be of scientific value, he maintains that any study of the editorials in our present-day journals continues to show traces of this same "narrow, assertive dogmatism."

He finds that advances in medicine are not always reflected in the editorials, and that the editorial matter as a rule is not of the same quality as the original articles. He thinks further that editors write superficially, that they misjudge the power of discrimination of the readers, that many phases of medical practice are discussed with small knowledge and appreciation. He also finds fault with what he calls "personality in journalism," and sees in the various attitudes of our medical editors a just cause for criticism. As a remedy for all this and various other faults, which he regards as apparent, he thinks that all editorial comment expressing definite personal opinion should be signed.

Apparently this point of view has been accepted by one of our contemporaries, the combined *New York and Philadelphia Medical Journal*, whether stimulated or not by this paper of Dr. Crothers' we have no means of knowing. In the last issue of this journal two of the editorials on points of practical importance to the physician are signed by their authors. In justification of this somewhat radical editorial policy, the journal speaks in part as follows:

In this issue of the journal we begin the publication of "signed editorials." Those of our readers who are strict of diction may object that there can be no such thing as a "signed editorial"—that a signed article is necessarily not an editorial. Well, we are disposed to concede a good deal to strictness of diction, and we will admit at the outset that we use the term "signed editorial" simply for the sake of convenience, without in the least pretending that it is satisfactorily expressive. Still, our readers may perhaps be willing to admit that a signed article may have a certain degree of editorial quality if we let them into the secret of the fact that we are in great measure editorially responsible for these signed articles; that is, that we share the responsibility with the writers, which we do not profess to do in the case of other contributions bearing the authors' names, but, on the contrary, quite disclaim doing.

We certainly see no harm in applying the principle of individual authorship to editorial comment, but we confess that the argument advanced by our contemporary does not seem to us wholly satisfactory. The mere fact that the editor agrees with statements made by another man and holds himself editorially responsible is rather an evasion of the issue. In medical matters, should any question be raised, it is clear that in the eyes of the profession at large the responsibility must ultimately rest with the author of a signed article. We take it that it is because of this fact that the universal custom in journalism, whether medical or lay, has come to devote certain pages to unsigned statements, thereby giving added dignity to its utterances, and also, we are willing to admit, at times permitting superficiality of treatment, as Dr. Crothers has suggested.

In general we are inclined to think that the accepted method is the better one, and that communications to retain their editorial character should remain unsigned. If this be true in lay journalism, we see no reason why it is not equally applicable to medical journalism. Dr. Crothers' strictures are certainly in a measure justified, but we cannot accept his conclusion that the matter would be remedied by the free use of individual signatures. It is certainly desirable to improve our editorial pages as such, to guard against personalities, to be fair to our contemporaries and to maintain an increasingly higher standard, but this should, and may in our opinion, be accomplished by a continuance of the time-honored system.

THE MANILA DEATH-RATE.

THE report of the commissioner of health for the Philippines, Major E. C. Carter, surgeon U. S.

Army, for the month of March last, is of particular interest, since it calls attention to the gratifying and progressive decrease in the death-rate for Manila, as shown by comparing the vital statistics for the first three months of each of the past four years. Figured for each month on a basis of the deaths which would occur at the existing rate in each 1,000 population for one year, the figures are as follows:

	1900.	1901.	1902.	1903.
MONTH.	An. death-rate per 1,000.	An. death-rate per 1,000.	An. death-rate per 1,000.	An. death-rate per 1,000.
January	50.65	36.22	30.16	23.46
February	47.08	36.69	30.81	22.05
March	42.67	42.67.	30.02	21.01
Av'ge annual death-rate for period compared . . .	46.80	38.19	30.33	22.17

It is seen from these figures that so far during the present year the Manila death-rate is less than half what it was for the same period four years ago. Based on present estimates of population, the number of lives which may be expected to be saved in 1903, judging from the first three months of this year, as compared with the same period in 1900, will amount to 7,442.

During the first quarter of the present year the death-rate has been reduced by 27%, as compared with the rate existing for the same period twelve months previously. This latest improvement has been accomplished in spite of the fact that Asiatic cholera and bubonic plague had both previously gained a foothold in the islands, and that the existence of a largely unvaccinated population in the provinces meant a constant introduction of smallpox into the city. Cases of plague, cholera and smallpox have occurred in Manila in each of the above months of the present year, but the precautions taken by the Board of Health prevented any epidemic outbreak as a result of these cases.

The sanitary results attained in the past four years through American control have been accomplished in spite of the naturally unsalubrious location of Manila, and its total lack of sanitation under Spanish sovereignty. Its level site interfering with drainage, the many foul canals extending through the city, the absence of any sewerage system, and the existence of an impure and insufficient water supply and of many old, unhealthful habitations, have all combined to create sanitary problems of the greatest difficulty. The Board of Health has been unable to turn previously existing methods and conditions to sanitary advantage, and has found it necessary not only to develop entirely new plans of improvement, but at the same time to combat the results of inherited unsanitary conditions. The mixed character of the population, Americans, Spanish, Filipinos, Chinese and others, and the prejudices, superstitions and largely primitive habits of life of the latter classes, have been a constant obstacle to sanitary work.

The report invites attention to the fact that the Manila death-rate so far during the present year, 22.17 per 1,000, is lower than that of many cities in the United States and elsewhere, which are not commonly regarded as unhealthful. For the year 1900 the following are some death-rates useful for comparison: Washington, D. C., 22.80; New Orleans, La., 24.74; Atlanta, Ga., 23.01; Memphis, Tenn., 25.10; San Antonio, Tex., 27.01; Charleston, S. C., 34.94. The rate for Honolulu in 1902 was 25.59; the rate for Boston in 1900 was 20.12; and for Havana, Cuba, in 1901, it was 22.11.

These results attained in Manila are certainly remarkable, and reflect great credit upon the ability and energy of the Americans who have conducted the sanitary work. It is not probable that equally as low rates as in the first quarter can be maintained throughout the present year, in view of the slight increase in cholera certain to occur with the onset of the rains; but in the coming year, when both plague and cholera will probably have ceased to be factors in the death-rate, it is probable that the death-rate of Manila will compare favorably with those of the cities in the southern part of the United States. That such results as have already been attained could be brought about in four years in spite of every obstacle shows that the American sanitarians here are bearing their full share of the "white man's burden."

CHANGES IN THE MEDICAL DEPARTMENT OF COLUMBIA UNIVERSITY.

PRESIDENT BUTLER of Columbia University, at the recent annual commencement, commented upon the past and present status of the College of Physicians and Surgeons, now affiliated with the university as its medical department. He alluded to the fact that the institution had suffered through the increasing number of its students, and the consequently increasing lack of facilities for their proper instruction, and also to the need of readjustment of the curriculum in order to keep up with the progress of medical teaching.

In consideration of these facts he announced, as stated in the *Medical News*, that the faculty had decided to put in operation a new and thoroughly

revised curriculum, with a diminution in the number of didactic lectures and an increase in personal laboratory work in various medical branches. Increasing facilities will hereafter be given to physiology, and, as previously announced, an entirely new department of pharmacology and therapeutics will be organized under men of recognized prominence in that branch of work. The principle of individualizing the instruction will also find place in the work in pathology, so that not more than ten students will be assigned to any one laboratory instructor.

After commenting on the development of the Vanderbilt clinic, which has long been associated with the medical school, President Butler urged the necessity of a university hospital, an adjunct of medical schools which has been peculiarly slow in coming in this country. Another suggestion, which we regard as of very great importance, is that a reference library for students be provided at the medical school. This again is a need which has been slow of recognition. It would certainly be possible to organize and equip such a library with the more important medical books and periodicals to which students should have free access, and there can be no question that such a library close at hand would prove as valuable a stimulus to students of medicine as do libraries in other departments of knowledge to students of those branches. Finally, President Butler expresses the hope that with a raised standard of admission to the medical school there may be this year a diminution of the number of students applying, and that this diminution will take place among those least competent.

All this sounds familiar. The stimulus which for various reasons has been given to the cause of medical education, within the last few years, is gradually finding expression in all our large medical institutions, and will, no doubt, by degrees have its effect upon the smaller ones. Large financial resources are evidently necessary in order that these complicated schemes of instruction may be carried out. It is gratifying in this connection to note that President Eliot, whose judgment of the trend of contemporary events is not likely to be at fault, recently remarked, as stated in another column, that "the money" (speaking of the medical school) "comes easier there than anywhere else. . . . It is directed in this way by the conviction that many more discoveries and unimagined blessings are coming out of medical study into the service of the world."

If this be true there can be no question that the future of medical education, and the best medical education, is assured. We are glad to note that the College of Physicians and Surgeons of New York is coming to a clear recognition of the needs of the immediate future, since it is eminently desirable that our leading medical institutions should unite in their claims as to what the definite requirements are, of the most progressive medical school. That the necessary money will be forthcoming to meet this general demand, recent events bring absolute assurance.

MEDICAL NOTES.

DEATH OF PROF. CARL GUSSENBAUER. — The death of Prof. Carl Gussenbauer of Vienna is announced in the sixty-second year of his age. He was formerly one of Billroth's assistants, and after holding various professorships in other universities, he was in 1894, on the death of Billroth, called to Vienna as professor of surgery. In 1895 he became an editor of the *Archiv für klinische Chirurgie*. His contributions to medical literature have been numerous and on most diversified topics in relation to the general subject of surgery.

DEATH OF PROF. CARL GEGENBAUER. — The death of Prof. Carl Gegenbauer, at one time professor of anatomy in the University of Heidelberg, is announced at the age of seventy-six.

RECORD OF CHICAGO HEALTH DEPARTMENT. — In reply to an attack on the Chicago Health Department made in certain of the Chicago daily papers, Commissioner of Health Arthur R. Reynolds makes a vigorous defense in the *Bulletin of the Health Department* and submits the following figures: During the six years 1891–1896, immediately preceding the present administration of the department, a total of 152,424 deaths were reported in Chicago; during the six years 1897–1902, of the present administration, the total deaths reported were 145,907, or 6,517 fewer deaths in upwards of 360,000 more population. The reduction is even greater among infants and young children — the acknowledged test of the efficiency of a sanitary administration. During the first period there were 68,008 deaths under five years of age; during the second period there were only 49,360 such deaths.

BOSTON AND NEW ENGLAND.

CHANGE OF EDITORIAL OFFICE. — The editorial office of the JOURNAL will hereafter be Room 707, Paddock Building, 101 Tremont Street. MSS. and communications to the editor should be sent to this address.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 15, 1903, there were reported to the Board of Health of Boston

the following cases of acute infectious diseases: Diphtheria 30, scarlatina 18, typhoid fever 18, measles 20, smallpox 0.

CHILD LABOR. — The American Federation of Labor has taken up the question of child labor and has presented an appeal for a stricter enforcement of the law, particularly in certain districts in Lowell. It is stated that many children under fourteen are at work in the mills.

FURTHER GIFTS TO THE HARVARD MEDICAL SCHOOL. — In his speech at the commencement exercises of Harvard University, President Eliot said: "This year our treasurer reports that the cash addition to the property of the college is $1,300,000. Of that sum $500,000 consists of contributions to the great undertaking of the medical school. And that leads me to speak of this particular direction of the beneficence of the friends of the university — for medicine. More than $2,000,000 have been attracted to the medical school undertaking. The money comes easier there than anywhere else. What is the reason? It is directed in this way by the profound sense of gratitude of many men and many women for the service which medicine has rendered to them, to their children, to those dear to them. It is directed in this way by the conviction that many more discoveries and unimagined blessings are coming out of medical study into the service of the world. This very day there have been added to the funds provided for the medical school undertaking $285,000. And both gifts — there are two — come charged with the most sacred purpose to do good in this world."

WORK OF BOSTON DISPENSARY. — At a recent meeting of the managers of the Boston Dispensary, it was reported that the total of new patients treated at the dispensary during the last quarter was 9,902, and that the number of visits made by district physicians at the homes of patients was 5,036. Ninety-three physicians are now connected with the institution, and about 15 special departments of medicine are reported. With the growth of the institution, in spite of the recent enlargement of the building, there is still lack of room for the best work. An additional building is needed at a cost of $65,000, and there is also need of funds to provide districts in Charlestown and Dorchester, in order that patients may be treated at their homes. The Boston Dispensary is doing a somewhat unique work and one which all who have information on the subject know to be of the greatest value to the community. It is to be hoped that the necessary expansion of the work may not be hindered for lack of financial support.

BOSTON MORTALITY STATISTICS. — The number of deaths reported to the Board of Health for the week ending July 11 was 202, as against 190 the corresponding week last year, showing an increase of 12 deaths, and making the death-rate for the week 17.46. Of this number 102 were males and 100 were females; 126 were born in the United States, 73 in foreign countries and 3 unknown; 40 were of American parentage, 139 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 34 cases, 1 death; scarlatina, 21 cases, 2 deaths; typhoid fever, 19 cases, no deaths; measles, 23 cases, no deaths; tuberculosis, 20 cases, 24 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 15, whooping cough 1, heart disease 17, bronchitis 1, marasmus 3. There were 24 deaths from violent causes. The number of children who died under one year was 39, under five years 56, persons over sixty years 41; deaths in public institutions 60.

NOTES FROM THE PHILIPPINES.

VACCINATION. — During the first three and one-half months of this year the vaccine farm of the government laboratories has issued 750,257 units of vaccine virus. During the previous three months 162,221 units were thus issued, making 912,478 units distributed in about six months. The present increase in the output of vaccine virus is due to the development of smallpox through the provinces, and the effort of the Board of Health to vaccinate the entire population of the islands as soon as possible. The latter task, herculean under the best conditions, is rendered even more difficult by lack of proper transportation, which renders the progress of the vaccinators through the islands unduly slow, and also is a cause of annoying delays in supplying them with virus. The fact that there are so many tribes in the islands, with entirely different ideas, customs and languages, also complicates the situation. As the sanitary machinery gets in better condition over here, the work will go on more rapidly. The city of Manila is now thoroughly vaccinated, and the work has about come to an end. During the present outbreak there have been only thirty-eight cases of smallpox in Manila, with six deaths, a fact that speaks volumes for the efficient way in which the health authorities have carried on their work. This small number of cases will compare very favorably with the amount of smallpox in the cities of the United States of the same size, and especially those largely having a dark-skinned population. Manila has a large floating population, and with the provinces as yet insufficiently gone over by the vaccinators, it is

inevitable that the infection should be introduced by unvaccinated individuals from time to time. Smallpox has been especially severe in the Igoriote country and in the smaller southern islands, where whole communities were swept away before the health authorities were able to control the epidemics by vaccination. Fortunately this is one of the few sanitary measures to which the native is not seriously opposed, and one which does not depend upon his own exertion for its performance. Any measure which calls for labor on the part of the native population has been shown by experience to be rarely properly carried out.

DESTRUCTION OF UNSANITARY HOUSES. — The Board of Health is destroying many unsanitary native houses in its operations against plague, but as the infected houses are usually tumble-down shacks of flimsy materials, appraised on an average as having a value of $10 or $15 each, no very great pecuniary loss results. These houses are drenched with coal oil and burned under charge of the fire department. As the new houses erected on their sites must be approved by the sanitary engineer of the health department, and as the further erection of nipa and bamboo houses in certain districts of the city is prohibited, the destruction of each house means not only a temporary but permanent sanitary improvement of the city.

IMPORTATION OF CARABAO. — Bids have already been opened for 10,000 carabao to be sent to the Philippines to replace those lost from rinderpest, the Government proposing to expend $1,000,000 for the purpose of restocking the islands. Most of the animals will be imported from southern China and Saigon, and all will be immunized with rinderpest prophylactic serum before embarkation. Thorough inoculation is absolutely necessary to the success of the plan, as many of the cattle ships are undoubtedly infected with rinderpest, and the disease is so prevalent in many parts of the islands that to ship the cattle without treatment means almost certain death to them. In the work of immunization so far carried on, only 5% of the animals have been lost, and if that ratio can be maintained in the future the officials in charge will feel fully satisfied. A part of the appropriation of Congress for the islands has been set apart to pay for the work of immunization. At present, the facilities for inoculation are not so complete as is desirable. Animals afflicted with the disease are necessary for the work of preparing the serum, and the sixty animals from which the material for inoculation has been obtained are now so thoroughly immunized that they are no longer of value for the purpose. The Board of Health is making strong efforts to keep new rinderpest infections from gaining entrance to the islands, and all cattle ships are now disinfected by the marine hospital surgeons at the Mariveles quarantine. At present, cattle ships are inspected by a board of veterinary surgeons before they are allowed to discharge their cargo. The animals are isolated in corrals near the water front and kept under observation prior to slaughter. No animal is permitted to leave the yards for any other purpose than slaughter without receiving an anti-rinderpest inoculation. A large quarantine camp for cattle is projected, and will probably be located at Malabon, six miles from Manila. The best place for the cattle quarantine is at Mariveles, but at that place it would be necessary to re-load the animals on boats for Manila and the provinces, and the added expense inclines the officials to regard the site at Malabon with more favor.

ATTEMPT TO SAVE CARABAO FROM RINDERPEST. — The health department of the Philippines has met with many unusual experiences in its sanitary work in the archipelago, of which its efforts to save the carabao on the island of Tablas from rinderpest furnish a good example. Last year, when this disease was killing the cattle and carabao herds throughout the larger islands, inoculators with anti-rinderpest serum and apparatus for the immunization of these animals were sent to Tablas. The disease at that time had made scarcely any progress there, and the natives, with characteristic dread of new ideas and with distrust of the vaccinators, objected to having their cattle and carabao inoculated. It was tried on a few animals almost by force; and when these animals developed the slight illness which follows inoculation, a wave of indignation swept over the island. Carabao were hurried into the mountains and hidden so that they might be kept from the evil influence of inoculation. The inoculators explained and pleaded, but all in vain; and when they threatened to forcibly inoculate the animals they were met with a like threat, and were warned that if they followed the carabao to the mountains they would be mobbed and killed by the aroused natives. Open threats were made, and the government inoculators were practically forced to flee from the island after having inoculated but twenty carabao. In due time the wave of rinderpest reached Tablas and the animals began to die. Hundreds perished from the disease, but not one of the twenty that had been given the mysterious treatment of the Americanos. The immunized twenty browsed and fed and wallowed with the other carabao, but were not affected. When all was over the twenty were about the only survivors from rinderpest left on the island, and as time passed the business end of the proposition finally penetrated to the brains of the natives and over-

came their superstitions and prejudice. A few days ago a very humble delegation of residents of Tablas presented itself to the government authorities in Manila, and requested that an expert with a barrel of anti-rinderpest serum be sent to their island to treat the few remaining animals and those that they were importing.

Miscellany.

RESOLUTIONS ON THE DEATH OF W. D. HOLMES, M.D.

THE Fellows of the Norfolk South District Medical Society hereby express their regard and esteem for their deceased colleague:

Dr. Holmes, although a recent member of our society, did not hesitate to express his opinion in our deliberations, our actions, our discussions, and that too in a manner suggestive of ripeness, deliberation and thought. Many of us had met him professionally but little, during his short residence in Braintree, and yet those in his immediate vicinity who had, always found him the true physician, the courteous, unselfish, professional gentleman, the tried and trusted guardian of his patients, his friends.

The members of this society offer to his wife and family their heartfelt sympathy in their deep affliction, and to that larger circle who have lost their warm, sincere and sympathetic adviser, our condolence at this time.

Resolved, That this memorial be entered upon the records of this society; that a copy of the same be forwarded to Mrs. Holmes, and that a copy also be furnished for publication to the Braintree papers and to THE BOSTON MEDICAL AND SURGICAL JOURNAL.

Respectfully submitted,

For the society,

HENRY L. DEARING, M.D.
ROBERT F. BURLEIGH, M.D.
FRANK W. BRETT, M.D.

Correspondence.

ARE NURSES PROFESSIONAL PERSONS?

BOSTON, July 5, 1903.

MR. EDITOR: Your editorial in the current number of the JOURNAL (July 2) must interest all of us who have concerned ourselves with what one may call the nurse's problem. One aspect of the problem frequently has appeared to me to be too little regarded; I refer to the condition which you mention in describing the work of nurses as a "liberal profession,"—their status after graduation.

The meaning of the words "liberal profession" must be an extremely elastic one. The Standard Dictionary defines a profession as "an occupation that properly involves a liberal education or its equivalent, and mental rather than manual labor." Truly this is a halting description, though correct enough so far as it goes.

I take it that professional persons, such as lawyers, doctors, literary men, engineers, etc., work for fees — for small fees or for large fees according to their earning capacity. The professional person's success in life must depend upon his mental and physical achievements and capacities, and his tasks, limited in the same fashion, are a measure of his success.

In this sense can nurses be regarded as professional persons? In the very nature of things they must work for wages and not for fees, their wages are limited by well-recognized conventions and their ambitions and progress are not stimulated by increasing opportunities and proportionate increasing returns.

Most of the advocates of the higher training of nurses have lost sight of the individual after her graduation. It would be interesting to know in what way they propose to solve the problem of nurses as practitioners and not as undergraduates..

School work is but the first step in the career of most professional persons. After graduation comes development, progress, achievement. In every true profession there must be ceaseless advance, but no goal.

Who may say that in a nurse's life work, her graduation does not mark the goal of progress?

M.

APPENDICOSTOMY?

BOSTON, July 3, 1903.

MR. EDITOR: With the interrogation mark preceding this word, after the manner of the Spanish, it simply says what is the expense attached to my appendix? It would be a wise plan to appoint a philologist on the surgical staff of every hospital and as the surgeons invent new operations the decadence of the classics could at the same time be avoided.

It is not plain to me how this word can come to signify the procedure which your editorial describes. If, as you admit, the word is a hybrid, then it is part Latin and part Greek while wholly English. I cannot translate the "cos" unless it means rib. It is to be supposed that the usual τομή extends to the ribs then? But why do you allow Meyer to continue that surgical falsehood that the appendix is "an absolutely useless organ," in the light of the numerous investigations already published which show that this is a very important organ which "actively functionates"?

It is very poor logic which allows the conclusion that because we do not know what an organ does we must infer that it does nothing.

I rather discourage your attempt to award a palm to a surgeon for a discovery which no chirurgeon (worker by hand) can ever make unless at the same time he is a good physiologist. Will you not write for us a timely editorial upon the true function of the appendix? It will, at least, encourage the farmers who have had very poor luck with their grape culture since our lamented Jackson so earnestly told us that its only function consisted in "catching grape seeds and giving typho-enteritis."

Very truly yours.

EDMUND D. SPEAR, M.D.

METEOROLOGICAL RECORD.

For the week ending July 4, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. . 28	29.99	66	74	57	47	57	52	N W	S W	4	12	C.	C.	O.
M . 29	29.94	59	63	55	78	82	80	S E	N E	6	6	O.	R.	.06
T. . 30	29.90	63	72	54	78	79	78	N	S W	3	12	F.	O.	.16
W . 1	29.80	75	84	66	90	90	90	W	E	12	5	R.	F.	.18
T. . 2	29.68	82	91	73	65	38	52	W	W	14	15	C.	C.	O.
F. . 3	29.86	75	84	66	62	56	59	N W	N W	10	10	C.	F.	O.
S. . 4	30.05	66	72	61	46	61	54	N E	S E	7	9	C.	C.	O.
☞	29.89		77	62			66							.40

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 4, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Scarlet fever.
New York . .	3,785,156	1,323	545	31.22	9.52	3.55	14.58	1.05
Chicago . . .	1,985,370	563	172	28.59	12.68	2.66	8.52	1.60
Philadelphia	1,378,527	479	191	37.35	6.05	1.46	13.77	.83
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	262	110	36.64	3.82	.76	20.23	1.14
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	189	—	34 38	4.76	—	19.04	1.05
Cincinnati .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	73	35	24.66	13.70	1.37	10.96	—
Boston . . .	603,163	168	38	26.18	6.54	1.78	3.57	1.78
Worcester . .	132,044	29	11	20.68	6.89	—	6.89	—
Fall River .	115,549	41	23	43.90	2.44	—	36.58	—
Lowell . . .	101,959	35	13	14.28	5.71	2.85	—	—
Cambridge .	98,639	16	4	18.75	6.25	—	6.25	—
Lynn	72,497	19	6	5.26	—	5.26	—	—
Lawrence . .	69,766	22	12	50.00	22.72	—	31.81	—
Springfield	69,389	32	10	9.37	18.75	—	—	—
Somerville .	68,110	—	—	—	—	—	—	—
New Bedford	67,198	35	15	34.28	8.57	2.85	2.85	11.42
Holyoke . . .	49,286	14	11	57.12	7.14	7.14	21.42	14.28
Brockton . .	44,873	7	0	—	—	—	—	—
Haverhill . .	42,104	10	4	20.00	10.00	—	—	—
Newton . . .	37,794	—	—	—	—	—	—	—
Salem	36,876	10	2	—	—	—	—	—
Malden . . .	36,286	13	3	23.10	—	—	—	—
Chelsea . . .	35,876	14	6	7.14	—	7.14	—	—
Fitchburg . .	35,069	4	1	—	25.00	—	—	—
Taunton . . .	33,656	11	2	27.27	27.27	—	18.18	—
Everett . . .	28,620	8	1	12.50	—	—	—	—
North Adams	27,862	—	—	—	—	—	—	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	4	1	—	—	—	—	—
Waltham . .	25,193	5	2	20.00	20.00	20.00	—	—
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,589	9	—	—	11.11	—	—	—
Chicopee . .	21,031	6	3	33.33	16.67	—	16.67	—
Medford . .	20,962	5	—	—	20.00	—	—	—
Northampton	19,883	6	3	16.67	—	16.67	—	—
Beverly . . .	15,302	4	1	75.00	—	—	—	—
Clinton . . .	15,161	—	—	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	2	1	—	—	—	—	—
Woburn . . .	14,300	2	2	50.00	—	—	—	—
Hyde Park .	14,175	9	2	22.22	11.11	—	11.11	—
Adams . . .	13,745	1	—	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	3	0	33.33	—	33.33	—	—
Melrose . . .	13,600	—	—	—	—	—	—	—
Westfield . .	13,418	1	—	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	1	—	—	—	—	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	1	—	100.00	—	—	—	—
Weymouth .	11,344	4	2	—	25.00	—	—	—
Southbridge .	11,268	6	1	16.67	16.67	—	—	—
Watertown .	11,077	1	—	—	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,447; under five years of age, 1,234; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,066, acute lung diseases 300, consumption 333, scarlet fever 41, whooping cough 36, cerebrospinal meningitis 8, smallpox 12, erysipelas 11, measles 35, typhoid fever 55, diarrheal diseases 443, diphtheria and croup 83.

From whooping cough, New York 8, Chicago 2, Philadelphia 9, Baltimore 2, Pittsburg 3, Boston 1, Worcester 1, Fall River 3, Lowell 2, Cambridge 1, Springfield 2, Woburn 1, Beverly 1. From erysipelas, New York 3, Chicago 2, Philadelphia 3, Pittsburg 1, Boston 1, Everett 1. From smallpox, Philadelphia 8, Pittsburg 4.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending June 20, the death-rate was 14.3. Deaths reported, 4,138; acute diseases of the respiratory organs (London) 134, whooping cough 99, diphtheria 42, measles 136, smallpox 7, scarlet fever 38.

The death-rate ranged from 4.7 in Hornsey to 28.7 in Coventry; London 13.1, West Ham 12.2, Brighton 10.0, Portsmouth 12.6, Southampton 8.0, Plymouth 14.4, Bristol 11.7, Birmingham 17.1, Leicester 13.0, Nottingham 16.1, Bolton 13.8, Manchester 18.9, Salford 12.9, Bradford 13.6, Leeds 15.3, Hull 16.9, Newcastle-on-Tyne 17.4, Cardiff 17.5, Rhondda 13.9, Liverpool 17.8, Great Yarmouth 15.1.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 9, 1903.

GASSAWAY, J. M., surgeon. Leave of absence granted Surgeon Gassaway for two days from June 28, amended so as to be effective from July 5. July 3, 1903.

STONER, G. W., surgeon. To proceed to Richford, Vt.; Malone, Niagara Falls and Buffalo, N. Y.; Montreal, Canada; Port Huron, Detroit and Sault Ste. Marie, Mich., for special temporary duty. July 8, 1903.

DECKER, C. E., assistant surgeon. Granted extension of leave of absence, on account of sickness, until July 15. July 7, 1903.

TROTTER, F. E., assistant surgeon. Granted leave of absence for seven days. July 6, 1903.

MCLAUGHLIN, A. J., assistant surgeon. Assigned in charge of Miscellaneous Division, Bureau of Public Health and Marine Hospital Service. July 8, 1903.

ROBERTSON, H. MCG., assistant surgeon. Granted leave of absence for five days. July 3, 1903.

CHANDLER, R., acting assistant surgeon. Granted leave of absence for eight days from July 18. July 8, 1903.

CLEAVES, F. H., acting assistant surgeon. Granted leave of absence for twenty-three days from July 6. July 2, 1903.

PRIMROSE, R. S., acting assistant surgeon. Granted leave of absence for ten days. July 2, 1903.

WIGHTMAN, W. M., acting assistant surgeon. Granted extension of leave of absence for one week from June 26. July 2, 1903.

BOARD CONVENED.

Board convened to meet at Washington, D. C., July 8, 1903, for the purpose of considering the preparation of plans for the inspection of vaccine farms and anti-toxin establishments. Detail for the board: Assistant Surgeon-General H. D. Geddings, chairman; Passed Assistant Surgeon M. J. Rosenau; Passed Assistant Surgeon J. F. Anderson, recorder.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING JULY 11, 1903.

R. L. SUTTON, assistant surgeon. Detached from Naval Hospital, Washington, D. C., and ordered to Baltimore, Md., for special temporary duty.

O. KOHLHASE, assistant surgeon. Ordered to Naval Hospital, Mare Island, Cal.

W. H. RENNIE, assistant surgeon. Ordered to Naval Hospital, Naval Home, Philadelphia, Pa.

W. B. SMITH, assistant surgeon. Ordered to Naval Hospital, Pensacola, Fla.

J. S. WOODWARD and P. T. DESSEZ, assistant surgeons. Ordered to Naval Hospital, Navy Yard, Washington.

J. D. MANCHESTER, assistant surgeon. Ordered to Naval Hospital, Navy Yard, Boston, Mass.

A. J. GEIGER, W. S. HOEN, assistant surgeons. Ordered to Naval Hospital, Navy Yard, Norfolk, Va.

C. E. RYDER, J. A. RANDALL, assistant surgeons. Appointed assistant surgeon with rank of lieutenant, junior grade, from June 26, 1903.

J. T. MILLER, acting assistant surgeon. Ordered to Navy Yard, Mare Island, Cal.

F. W. TYREE, acting assistant surgeon. Appointed acting assistant surgeon with rank of lieutenant, junior grade, from July 1, 1903.

S. H. DICKSON, medical inspector. Granted sick leave for three months.

G. R. PLUMMER, acting assistant surgeon. Appointed acting assistant surgeon with rank of lieutenant, junior grade, from July 1, 1903.

H. N. T. HARRIS, surgeon. Detached from "Glacier" and ordered home to wait orders.

F. W. F. WIEBER, surgeon. Detached from Naval Academy and ordered to wait orders.

BOOKS AND PAMPHLETS RECEIVED.

Uric Acid as a Factor in the Causation of Disease, a Contribution to the Pathology of High Blood Pressure, Headache, Epilepsy, Nervousness, Mental Diseases, Asthma, Hay Fever, Paroxysmal Hæmoglobinuria, Anæmia, Bright's Disease, Diabetes, Gout, Rheumatism, Bronchitis, and Other Disorders. By Alexander Haig, M.A., M.D. (Oxon.), F.R.C.P. Sixth Edition. Illustrated. Philadelphia: P. Blakiston's, Son & Co. 1903.

A Treatise on Diseases of the Rectum, Anus, and Sigmoid Flexure. By Joseph M. Mathews, M.D., LL.D. Third Edition. Revised. Illustrated. New York: D. Appleton & Co. 1903.

Protozoa and Disease. By J. Jackson Clarke, M.B. (Lond.). Illustrated. New York: William Wood & Co. 1903.

Addresses.

THE SHATTUCK LECTURE.

THE SOURCES, FAVORING CONDITIONS AND PROPHYLAXIS OF MALARIA IN TEMPERATE CLIMATES, WITH SPECIAL REFERENCE TO MASSACHUSETTS.*

BY THEOBALD SMITH, M.D., BOSTON.

(Continued from No. 3, page 64.)

WHATEVER may be the biological process, to us its significance is summed up in the possibility of infecting the mosquitoes.†

Without doubt the parasites are so few in the blood in the clinically recovered or the immune cases that only a small percent of the attacking Anopheles would infect themselves. The most favorable time for such infection would be at the end of a relapse or a fresh infection, when a large number of the parasites would become gametes and thereby capable of continuing the cycle in the mosquito. The attacking mosquitoes would at this stage find plenty of gametes and the danger of creating a focus would be at its maximum. It will be seen that I am putting the burden of starting new foci of malaria and of awakening the disease in the spring upon the older, latent or partly immune cases, who are in that stage of immunity which readily produces gametes after a relapse.

The transmission of sporozoa seems to be accomplished chiefly through the agency of recovered cases. *Coccidium oviforme* of rabbits is handed down from parents to young. This is probably the case with one form of bird malaria due to *Halteridium danilewskyi*. Some years ago I examined in this vicinity the blood of four young crows belonging to the same brood. In one of them the malaria parasites were very numerous. The others were not infected. I examined the blood of the infected bird day after day without seeing any forms indicating multiplication. When a drop of this blood was examined with high powers of the microscope, a considerable number of the largest parasites would rupture the red corpuscle in about two minutes and a half, assume the form of spheres, and throw out a number of flagella. The parasites were all gametes or becoming such.‡ The infection of the young bird which had not yet left the nest came probably from the parents through some ecto-parasite. In their blood the parasite was probably in a "latent" condition.

The surest way of testing the infectiousness of persons freshly attacked, those who have passed through several seasons of malaria and those who have grown up where malaria is endemic, is to determine from what class of cases mosquitoes can infect themselves. It should also be thoroughly ascertained to what extent infection is possible in the latent stage. Experiments made for this purpose by endeavoring to infect mosquitoes have been reported from various countries. The precise history of the cases from whom mosquitoes drew blood is not given and in most instances the experiments were made in localities more or less permanently under the influence of malarial virus. Bignami and Bastianelli refer to a patient with crescents in his blood who successfully infected *A. claviger* and *A. superpictus*. Grassi succeeded in infecting Anopheles from a patient whose blood was full of crescents. W. S. Thayer[29] reported in 1900 a slight infection of *A. maculipennis* after feeding on a case of tertian and one of estivo-autumnal fever. Woldert[30] writes of one infection after many negative trials with the estivo-autumnal parasite. Similarly, Berkeley[31] refers to one infection out of sixty dissections. Van der Scheer and Berkelom[32] in an endemic locality in Zealand (Denmark) found that they were able to infect Anopheles when the blood contained gametes, but not when quinine treatment had preceded the experiment. Manson's[33] son was successfully infected with mosquitoes imported from Italy which had fed upon the blood of a case of benign tertian fever.

It is evident that the infection of mosquitoes is not an easy matter and frequently fails. These failures may be in part due to the mosquito, but I am inclined to believe that they are largely due to the patient not being ready to furnish satisfactory gametes. Grassi[3] (p. 115) makes the significant statement that "there are persons who though their blood contains gametes are not capable of infecting Anopheles. These gametes . . . are sometimes too young, more often they appear too old, or perhaps the suspected parthogenesis which leads to relapses has already been started." It is quite obvious that the large amount of painstaking work which has been done in studying the transmission of malaria is only the beginning of more detailed and thorough work to be done not only in the tropics but in those localities in our climate where malaria is trying to obtain a foothold, but has not yet fully succeeded.

The persistence of the malaria parasite in the blood explains not only the dissemination of malaria by human beings, but it also throws a strong light upon the many theories formerly held concerning the source of malarial infection. The so-called hydric theory which regarded bad drinking water as a source of infection is quite prevalent in the South. When a person drank bad water, upset his digestive system and had an attack of malaria as a result, the inference that the water introduced the germs was a natural one. We know, however, that such digestive disturbances simply give the latent virus an opportunity to multiply by temporarily breaking down protective barriers, as shown by the exhaustive statistical studies of Caccini. Summing up the evidence concerning human beings as carriers of malarial parasites and as sources of infection, we find that there is no definite information at hand as to the time when affected individuals may infect mosquitoes. Data from various sources including comparative pathology favor the view that human beings are not at once infectious, but that this capacity comes with prolonged parasitism and that it may be retained indefinitely.

* Delivered before The Massachusetts Medical Society, June 9, 1903.

† To me the simplest explanation which has suggested itself is that during the period of latency the parasites multiply as they do during the clinical outbreak, but more and more slowly, and in fewer numbers. Each sporulation is drawn out, in time as it were, and leads finally to the formation of gametes.

‡ The asexual stage of this parasite is not known.

MOSQUITOES AS INTERMEDIATE HOSTS OF MALARIA.

To follow the intricate processes of the immunization of man during malaria, and their bearing upon infectiousness of the patient, can have only a secondary value with us, even if it were possible to say at what precise moment the mosquitoes may become infected by drawing blood. The healthy individual, even though dangerous, should not be restrained if the suppression of malaria can be accomplished in other ways. This leads me to the second link in the etiological chain — the mosquito. The relation of mosquitoes to malaria as carriers became a definite working hypothesis with me in 1896. In 1897 I devised a set of questions for use in the investigation of local epidemics, among which those concerning mosquitoes and the relative exposure of individuals to them were prominent. The hopelessness of making any progress in this subject, in a latitude usually free from malaria and only sporadically invaded by it, soon became evident. The sequel showed the reasonableness of this state of mind. Not a single fact of fundamental importance in the etiology of malaria has been discovered outside of the endemic foci, and the most valuable studies have been made in the heart of the tropics. There are, however, minor problems pertaining to local conditions which can be solved perhaps better in our latitude than farther south.

Basing ourselves upon the work of Grassi and those who have followed him, we include only the genus Anopheles among the intermediate hosts of the malaria parasite. In our State two species of this genus are widely disseminated and encountered in many localities. These are *A. maculipennis* and *A. punctipennis*. The introduction of these species into Massachusetts is not known. They are, however, not a recent acquisition. Dr. C. S. Minot[34] found larvæ identified by Mr. Burgess as Anopheles in ponds of the Forest Hills district in 1880. Which species they represented is not known. By far the most prevalent and most numerous species is *A. punctipennis*. It is as large as the large Culex species, and is particularly conspicuous on account of the yellowish-white spots on the wings and its peculiar position when resting. The adult female, leaving its hiding places in the early spring, measures (excluding proboscis) 5 to 6 mm. in length. The life history differs only in unimportant details from that of the genus Culex. The aquatic larvæ, after a period of two or more weeks, depending upon the temperature and food supply, enter the pupa stage. In this they remain about three days and then emerge as sexually mature insects. *A. punctipennis* may be encountered on the wing from March until late in November. In 1902 I encountered a number of females on March 22, when they vigorously attacked me. In 1903 they did the same thing, March 14, a very warm day. Even in midwinter they may be seen about houses when they have been driven from their hiding places by workmen.

The larvæ, as is now well known, differ from those of Culex in lying horizontally just below the surface of the water, with the short air-tubes on the eighth abdominal segment at the surface. They vary more or less in coloration from a light to a dark green. White dots along the dorsal median line of the abdomen may or may not be present. The largest are about 6 to 7 mm. long. During the summer of 1902 I spent much time in the effort to find some means of distinguishing the larva of *A. punctipennis* from that of *A. maculipennis*, but thus far without success. This may have been in part due to the fact that the latter were quite scarce. The pupæ of the two species of Anopheles differ very slightly from those of Culex. The shorter breathing-tube in Anopheles, as mentioned by Howard,[35] has served me well in recognizing them.

A. punctipennis I have found either in the larval or the adult form in different parts of our State. The larvæ were taken to the laboratory, and there the development into the adult insect was watched in order to make sure of the species. In this way I have collected or bred *A. punctipennis* from various regions of the Boston district (Forest Hills, Jamaica Plain, West Roxbury near Charles River, Faneuil Station, Cambridge, Belmont), Weston, Concord, Clinton, South Lancaster, Pittsfield and Williamstown. They have been found in Worcester and Springfield. I am inclined to believe they will be found breeding in all parts of our State, if diligently looked for.

A. maculipennis, according to my observations, is a less common species. It is distinguished from Culex with greater difficulty, owing to very slight spotting of the wings. In its position also it differs less from Culex than does *A. punctipennis*, and I have been deceived several times at a distance in confounding it with Culex. I have already referred to the difficulty in distinguishing it from *A. punctipennis* in the larval stage. This species has been collected from Greater Boston. It was found very abundant, in the fall of 1901, near the Charles River in West Roxbury (Parental School). Among specimens sent me from Concord by Dr. Chamberlin, some years ago, this species was included. Only very few of the insects I have bred in the laboratory were *A. maculipennis*. This may be due to their relative scarcity or to the difficulty of rearing them artificially, as some larvæ usually die. It is of interest to note that in certain localities certain species or groups of species seem to predominate. In the fall of the year when mosquitoes are driven indoors by the cold, in search of places for passing the winter, I have noticed that in one building almost exclusively individuals belonging to the genus Culex would appear. In another building, an eighth of a mile away, individuals of *A. punctipennis* were found almost exclusively. In a third place, three or four miles away, *A. maculipennis* was the predominant species. In a suburb of Harrisburg, Pa., in August, 1900, Bashore[36] counted 133 *A. maculipennis* and 7 *A. punctipennis*. The conditions favoring the breeding of these species may throw an important light upon the endemicity of malaria in certain places. Thus far they have not been thoroughly studied, and they remain unknown.

It is now generally conceded that all species of Anopheles may become intermediate hosts of the malaria parasites. But some are much more easily infected than others. Of the two prevalent in Massachusetts, *A. maculipennis* (*A. quadrimaculatus*, *A. claviger?*) is the one which has been chiefly experimented with in other countries. I am not informed of any experiments with the commoner *A. puncti-*

pennis. Some test of this important matter under conditions and with Anopheles existing in our latitude is very urgent. We should know the relative capacity of the two species for maturing the tertian parasite as drawn from the infected individual. We should know more about the temperature limits within which this development may go on to a successful conclusion. Since such experiments can now be carried on without exposing human beings to infection, by simply dissecting the infected mosquitoes, there is no reason why this information should not be forthcoming. We are in many respects better situated than those commissions who have made their investigations in tropical and subtropical countries, because we have but one parasite, that of tertian fever, to deal with, while their work has been complicated by the prevalence of three forms.

The application of knowledge gained in tropical countries, while applying in general to our own conditions, may fail in what are biologically speaking minor details, but practically speaking of very great importance. Outwardly and to the entomologist, *A. maculipennis* of our climate and that of Italy or the tropics may be the same.* But there may be important physiological differences due to climatic conditions. Marked differences in susceptibility toward certain diseases may exist in varieties or breeds of higher animals. Similar varietal differences could hardly be detected in mosquitoes by the classifier. Experiments to determine definitely the rôle of our two species of Anopheles in transmitting malaria are called for the more pointedly since voices have been raised recently against the assumption that all Anopheles species act as carriers. Christophers and Stevens found that the very abundant *A. rossii* in and about Calcutta did not convey malaria. When they proceeded in their investigations toward the foothills of the Himalayas, foci of endemic malaria appeared associated with other species of Anopheles shown to carry sporozoites in their salivary glands. Schüffner[9] in studying Anopheles on Sumatra, where malaria prevails chiefly on the coast, came to the conclusion that the coast mosquito soon degenerates in inland regions owing to unfavorable environment.

The mosquito, like the higher animals, appears to be the victim, or at least the host, of a number of parasites, belonging to widely different genera. In 1901, H. P. Johnson,[59] working in my laboratory upon Anopheles caught in the Charles River district, found in about 10% of the individuals of *A. maculipennis* bodies on the stomach wall which simulated very closely the malaria parasite. A very careful study, however, led to the decision that it was some other sporozoon, probably a gregarine.

The breeding places of Anopheles in our State are, as a rule, small, more or less stagnant bodies of water. They do not appear to breed in water kept in receptacles such as rain barrels, tin cans, street traps, obstructed house gutters and the like, but only in water collecting on the ground. But once I saw many Anopheles larvæ in rain-water which had collected in a large iron scoop; but even this was in a country district. This choice of natural bodies of water may account for the fact that Anopheles with us is essentially a rural insect so far as its breeding habits go. Occasionally it has been found in slightly brackish water,[37] but it is essentially an inhabitant of fresh water. It is stated that the insects prefer sunny places, but I have seen them in well-shaded brooks.

The food of these larvæ consists of minute forms of life floating in the water, and chiefly algæ and protozoa. The larva during feeding turns its head 180° so that its ventral surface is directed upward. The two brushes begin to swing rapidly. Currents are produced and the minute particles suspended in the water are violently thrown toward the mouth of the larvæ. They are thus dependent upon food floating near the surface layer of water. As is well known, ground water emerging into the light is rich in those salts which greatly favor the rapid growth of algæ, and E. O. Jordan[38] has found during observations made in Maine that such ground water contains Anopheles larvæ.

The wide prevalence of these larvæ in the country does not indicate any very great fastidiousness on their part, or any easily determined conditions which must prevail if they are to succeed. Among the places where they are found with us I may mention a few.

In low-lying rich meadows, with very little slope, the ditches used for drainage frequently contain Anopheles larvæ. Where foot-bridges cross them collections of rubbish are likely to form quiet pools for them. In larger brooks, Anopheles larvæ are encountered in pools formed by obstructions in the bed, such as tree stumps soil carried down during freshets and rubbish thrown into them. Especially where roads cross them, the aqueducts are apt to become dilapidated. Fallen stones and pieces of wood form artificial barriers here to favor the mosquitoes.

Not infrequently small shallow pools of rain or ground water without any outlet are favorable breeding places. These are frequently the result of insufficient or obstructed drainage due to road building and railroad embankments. The railroads are in fact responsible for many breeding places. Not only has the natural drainage been more or less interfered with by the construction of embankments across drainage valleys, but the soil used for such embankments has often been taken in such a manner as to leave ditches filled with stagnant water on one or both sides.

The larger bodies of water, including ponds, lakes and rivers, are not as a rule breeding places of mosquitoes. The enemies of the larvæ seem to predominate in such waters or else the food

*The position of the two last segments of the palpi in the male of our *A. maculipennis* is at right angles to the body axis and directed laterally. The figures of the European species, as given by Nuttall and Shipley[62] Kerschbaumer,[60] Grassi and Celli,[61] have the male palpi nearly straight and nearly in the body axis.

supply is too limited. Occasionally the shallow margins densely overgrown with water plants may favor them, but even here I have as a rule failed to find any larvæ.

The influence of sewage pollution upon the immunity of the larger bodies of water, more particularly the rivers (that is, the shallow margins, coves and stagnant reaches), is an important, though as yet unrecognized, question of public sanitation. It has been my personal experience to find larvæ in several badly polluted streams and not in those comparatively free from such pollution. Whether we are dealing here with a general fact or an accidental coincidence, I am still unprepared to say. Yet there is food for reflection and further study in the suggestion. Water polluted to a certain degree may favor the food of mosquitoes and suppress their enemies. Without going into any detail concerning my observations and impressions on this point, I leave it for future investigation.

Abandoned canals have in some states formed the focus of malaria infection, and there can be little doubt that they are admirably suited as mosquito breeders. Another variety of nuisance is created by brick manufacturing. Excavations are made for clay, and these are abandoned to themselves after the available material has been removed. Some years ago, in trying to account for cases of malaria in Southborough, I found in company with Dr. C. P. Jones a series of depressions overgrown with vegetation and partly filled with standing water. Mosquito larvæ were abundant in some, absent in others. We could not account for these depressions until told that they were old clay pits. A few broken bricks found near them afterward confirmed the statement.

The relation of shallow, stagnant pools and of small brooks and ditches to the mosquito varies considerably with the season and the rainfall. A certain abundance of rainfall may produce breeding places on the one hand, while on the other it may destroy such places already in existence by flooding and washing them out. To take a simple illustration: In 1902 a brook which during the greater part of the summer contained a moderate amount of running water did not harbor any mosquito larvæ. Late in August the amount of water in it decreased, and its bed consisted of a series of pools with only a little running water. In September I found the stream now containing many larvæ of Anopheles flourishing in the disconnected pools. Here the dry weather favored the mosquitoes. In other parts the dry weather had caused the shrinkage and disappearance of stagnant, undrained pools, which earlier in the season contained many larvæ.

Severe drought may favor them by a shrinkage and concentration of water in streams which may greatly favor the food supply of mosquitoes along the banks and in quiet, shallow coves. It may also disconnect shallow portions along the banks or shores from the main body and thus create breeding grounds where ordinarily none exist.

High temperature is universally favorable to the mosquito, for its larval life is shortened thereby and the food increased. It is also favorable to the rapid maturing of the malaria parasite in the mosquito. Under a certain temperature the parasite does not ripen.

There still remains one other condition of our surface waters which has been frequently considered the cause or at least the favoring condition of malaria. I refer to the impounding of flowing water artificially by dams. Only those who have explored our State more or less can have an adequate conception of the number of dams which have been built along its watercourses, and which have either been abandoned or which are still in use. To those familiar with the actual condition of things, an occasional examination of the map is a source of much interest. The streams, large and small, show a series of aneurysmal dilatations which might be considered freaks of nature, were it not that they are the work of man, and that originally beautiful streams have been defaced and deformed to yield the power needed to develop the factory industries of New England.

The site of a dam is usually chosen where its constuction will permanently flood the original banks and form a reservoir. The result is a settling basin, in which the suspended matter is deposited, slowly filling up the available space. The next step to offset this filling up is to raise the dam and flood more territory, thereby producing a still broader and usually very shallow basin.

The influence of dams upon the incidence of malaria will depend on a number of factors, and each dam must be considered by itself. The main factor is the relation of the dam to mosquitoes. Among the conditions which may favor the breeding of mosquitoes a few deserve special consideration:

(1) The shallowness of the water and the very gradual slope of the banks, which are usually densely overgrown with vegetation and which protect the larvæ from natural enemies.

(2) The relative pollution of the water, which on the one hand may stimulate the multiplication of microscopic algæ and other food for mosquito larvæ, on the other interfere with the higher animal life.

(3) The seasonal fluctuation, whereby in late summer detached pools and larger collections of water are left as mosquito breeders, provided the water in them does not dry up within three or four weeks.

The great dangers of such reservoirs has usually been ascribed to daily fluctuations of the water level, due to draining off during the working hours and refilling at night. The sloping sides of the reservoirs, formed of a deposit of very fine mud and ooze, are exposed to the sun during the day and in some unknown manner

malaria germs were supposed to rise from this alternately submerged and exposed mud. In many instances the original construction of the dam, or its subsequent elevation to a higher level, flooded woodland and the decaying tree stumps were looked upon as favoring or incubating malaria germs. To-day we interpret the matter quite differently. There is no evidence, experimental or theoretical, which assigns to malaria parasites life outside of man or the mosquito. They spend their whole life as parasites. Hence the exposed mud flats, though offensive, cannot any longer be regarded as the *causa peccans*, and the decaying vegetation is concerned only in furnishing food to pools of water harboring larvæ. Dams obstructing the normal current of any stream cannot thus be condemned without investigation. The particular local conditions must be taken into consideration and a careful search made for larvæ at different times of the warm season.

The salutary break in the continued breeding of mosquitoes, and hence in the accumulation of infection, by our severe winters, leads me to consider briefly the ways in which the mosquito escapes destruction during the cold season.

The hibernation or wintering over of adult mosquitoes has been known for many years. They seek the shelter of dark, unoccupied rooms and warm cellars, and the protected nooks in outhouses where they hide in a partly paralyzed condition until the warmth of the approaching spring stimulates them to move and leave their hiding places. It is surprising to note how many mosquitoes live through the winter in this way. Swarms appear quite suddenly on the first warm day. I have been unable to find among these any males.* The hibernating females are as a rule impregnated and very eager when they have left their hiding places to obtain food. Hence their vicious attacks at this time. The relation of these early attacks upon human beings to the production of malaria I shall refer to again later on. The wintering over of larvæ in water under the ice has been observed in different localities. Its occurrence in our latitude has not yet been reported, I believe, and I have no observations bearing upon this subject beyond the one that I have almost always failed to find larvæ late in the fall, shortly before the approach of winter.

The adult females which emerge in the early spring to obtain food for maturing the eggs have not been found with sporozoites in the salivary glands or with sporocysts on the stomach walls. The consensus of opinion seems to be that the malarial infection is not carried over in the mosquito, but that the latter is infected by drawing blood from cases having early relapses or a latent infection.

In concluding this chapter on the mosquito I shall merely mention the hypothesis occasionally brought forward that the infection may pass from the female mosquito to the ova and that the young may spread the germs. This complex process is the one which obtains in bovine malaria, and it is the only way in which the parasite can be transmitted; for the female which draws infected blood never passes to another host. No proof has been adduced in favor of this process in the mosquito; yet I think it should not be lost sight of or cast aside too peremptorily in any future work, for epidemiological studies do not contradict it.*

* I believe that the testimony is quite general that males have not been found hibernating.

THE HISTORY AND PRESENT STATUS OF MALARIA IN MASSACHUSETTS IN THE LIGHT OF RECENT BIOLOGICAL DISCOVERIES.

Interest in intermittent fever in our own State has been steadily maintained since the Boylston prize essay of Dr. Holmes. The disease has had more than its share of historians and chroniclers who have industriously labored to set before us accurate records of its dissemination and prevalence and who have attempted to locate the cause or causes.

As stated by Dr. J. F. A. Adams, there were several distinct epidemics of malaria in New England: (1) The earliest of which we have any records occurring among the settlers, especially in the New Haven region; (2) the epidemic of 1793–99 in Western Massachusetts; (3) that of 1828 to 1836, also in Western Massachusetts; and (4) the one beginning roughly in 1870 and continuing sporadically up to the present.

In Hubbard's "General History of New England," ague and fever is referred to as the "seasoning" through which newcomers had to go at New Haven in the earliest years of the colony. In the second epidemic, toward the end of the eighteenth century, the source of the infection in Massachusetts is, according to Dr. Holmes' correspondents, Western New York. The types of malaria are spoken of as quotidian, tertian, and quartan, and a type is described by Dr. Buel as occurring in the Sheffield epidemic in 1795 whose picture does not fit into the clinical frame of simple tertian. It suggests the estivo-autumnal fever of more southern latitudes. Yet it may after all have been a very severe type of tertian due to the presence of many generations of parasites. Buel calls it a bilious remittent fever. He emphasizes the pain in the head, back and limbs, the length of the hot fit as from six to forty-eight hours. There was no regularity in the reappearance of the paroxysms. "The fever tended to an intermittent form; but it could neither be called quotidian, tertian, quartan nor any other name used by authors to distinguish the different species of intermittent fevers." Possibly typhoid fever may have complicated the clinical picture. The immediate occasions for the appearance of the

* A large number of works on the mosquito have recently appeared in various languages. For those intending the more thorough study of species the work of L. O. Howard[35] forms a very good introduction. The largest and most recent monograph is that published in three volumes by F. V. Theobald under the auspices of the British Museum of Natural History. In this volume the reader will find references to other similar monographs. The work of Kerschbaumer[36] gives many interesting details concerning the life history of the mosquito.

disease were then as now assumed to be the construction of dams, the lowering and raising of the water level in them, and the building of canals. I find mosquitoes mentioned once in Dr. Holmes' essay as being more numerous than usual during the epidemic of intermittent fever and dysentery in the town of Sheffield in 1796.

Concerning the epidemic in 1828 to 1836, Dr. Oliver Peck of Sheffield writes, among other things, to Dr. Holmes that "the people here generally have a prejudice against the arrest of the disorder, imagining that they must have about a certain number of paroxysms at any rate, and that they are left more healthy if the disease is permitted to go on undisturbed, though bark was formerly and quinine is at present frequently used, and as I think with benefit. The disorder affects newcomers more especially, and more certainly the nearer they reside to the locality." In this letter we have a cropping out of the doctrine of immunity in malaria, already noted in the experience of the earliest settlers, who referred to it as the seasoning process. Dr. Holmes' correspondent was as eager then as now to impress upon him that the cases in his town were introduced and not indigenous. Relapses were clearly recognized, and some stated what is not an infrequent occurrence nowadays, that the recovered patient had a relapse early the following spring. Moreover, the influence of various bodily conditions due to intemperance, exposure and the like in bringing on a paroxysm was emphasized repeatedly.

The reappearance of malaria in more or less epidemic form since 1870 was carefully studied by Dr. J. F. A. Adams. He states that the summers of 1870, 1876 and 1880 were hot and dry, and all streams and ponds became extremely low. These seasons were characterized by an unusual prevalence and rapid spread of intermittent fever; in 1870 in New Haven and vicinity; in 1876 at Hartford and other towns on the Connecticut River in Connecticut; and in 1880 on the Connecticut River in Massachusetts and certain localities in Berkshire. The low water of 1880 was extraordinary. The Connecticut River had not been so low for many years, and all artificial reservoirs became drawn down so as to expose an immense area of marshy bottom. The irregular progress of the epidemic is also commented on. It jumped over certain places at first, to attack them later on.*

Intermittent fever around New Haven was described by Dr. H. Bronson[40] in 1872. The first case he traces to a sawmill in West Haven in 1863. The epidemic in South Framingham in 1885 has been investigated by Dr. Z. B. Adams[41] and described in a graphic manner. It seems to have been associated more or less directly with the building of a new conduit through Farm Pond.

* A somewhat similar survey of this last wave of malaria was published by Dr. C. V. Chapin. (The Origin and Progress of the Malarial Fever now Prevalent in New England. Fiske Fund Prize Dissertation. No. 32. 1884.)

Dr. C. H. Cook[42] in 1890 published an exhaustive inquiry into the prevalence of intermittent fever in Massachusetts. From 152 cities and towns responding to his circular letter, 86 reported intermittent fever, "an increase of 39 over the number reported in 1880 by Dr. Adams." Thirty-four towns reported sporadic cases only. In 52 the disease was more or less epidemic. In 1894 Dr. J. J. Thomas[43] collated information obtained from physicians and hospital records in towns along the Charles River, which showed a very great prevalence of malaria, especially in the town of Newton. The largest number of cases occurred in 1891–94, although in the years 1890 and 1891 the cases had been numerous. There are still two other papers dealing with the same theme whose authors made careful local inquiries. In 1901 Dr. F. L. Morse[45] investigated the prevalence of intermittent fever, past and present, in the towns bordering the Sudbury and Concord rivers. The earliest case of which he could obtain any definite information occurred in 1880, and is said to have been acquired in Boston. Among 1,186 persons, 209 cases occurred during the past twenty years.

A similar inquiry was made by Dr. Chamberlin[45] for Concord, for the period from 1870 to 1900.*

In addition to these various more or less exhaustive reports we have certain data collected by the State Board of Health in the routine examination of blood films for the malaria parasite. These data are valuable, since they are based on the demonstration of the parasite in the red blood corpuscles.

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(To be continued.)

* See, also, Malaria in Boston and Vicinity, by C. W. Townsend, Bost. Med. and Surg. Journ., 1892, cxxvii, p. 615, and Intermittent Fever in Brookline, by H. L. Chase, *ibid.*, p. 565.

Original Articles.

STUDIES ON THE ACTION OF ALCOHOL IN DISEASE, ESPECIALLY UPON THE CIRCULATION.[1]

BY RICHARD C. CABOT, M.D., BOSTON.

PERHAPS no subject has been more frequently or more heatedly discussed during the last few years than the action and value of alcohol. We have had two interesting symposia upon the subject in Boston within a year, and many similar discussions are reported in domestic and foreign journals. One might think, therefore, that the subject was about threshed out and that nothing new could be said about it, but as one looks over the reports of these discussions one fact is very striking, and that is the scarcity of experimental evidence regarding the action of alcohol in diseased human beings.

In the discussions to which I have referred, the disputants have usually ranged themselves in two parties, those favoring the use of alcohol on one side and those opposed to its use on the other. Those who favor its use usually do so on the ground of their general impression that it has done good in cases under their observation. Those opposed to the use of alcohol usually refer to a number of experiments, for the most part not very recent ones, upon the action of the drug in the lower animals. But very rarely has any one anything to say about experiments or measurements of the action of the drug upon any of the functions of the diseased human being. The "advocates of alcohol" say that it does good, but if you ask them: *What* good does it do? Does it decrease temperature? Does it improve sleep? Does it slow or strengthen the heart's action, and if so how much? — they have rarely anything to answer. On the other hand, if you ask the "opponents of alcohol" what harm it does they will point to the effect produced on a dog or a rabbit by doses of alcohol which would correspond to giving a man a quart of whiskey at a drink, or they will refer you to experiments on healthy soldiers or typesetters. The use of such evidence assumes that alcohol acts in the same way in all animals; whereas we know well that its action in mammals is very different from its action in birds, and have by no means proved what is true of its action in dogs or rabbits is true of its use in man. Another common assumption is that the effects of alcohol in disease are similar to its effects in health. But this is a totally unproved assumption, and there is, I think, a good deal of evidence that it is not true.

It seems to me, therefore, that there is a real need for exact experimental evidence regarding the action of alcohol in sickness, and it is to this problem that I have addressed myself. I have not sought to show that alcohol does good or that it does harm. I have rather tried to find out *what it does*, what its effect is upon temperature, upon the heart and pulse, upon the rapidity of the respiration, upon the amount of urine, upon the sweat, upon the appearance of the tongue, upon the appetite and upon the cerebral condition of the patient as shown in the amount he sleeps, in the effect of the drug upon delirium, and upon his spirits so far as could be ascertained by talking with him.

I will not deny that I have approached the subject with a marked bias, but I hasten to add that I have done all I could to prevent this bias from influencing my observations. That I have succeeded, at least to some extent, is evidenced, I think, by the fact that my results have not come out at all as I expected and indeed hoped that they would.

In order to counteract so far as possible the bad effects of my prejudices, I have recorded each of my observations on separate slips of paper without allowing myself to refer to the chart in which they were later recorded. As I could not retain in memory the records of the individual patients, and did not allow myself to be reminded of them by looking at the chart, I was thus unable to influence the readings in the direction of my expectations, as I previously found it very tempting to do.

In the study of the effects of alcohol on temperature, appetite, sleep, etc., I have circumvented my bias by getting nurses, who had no idea of what I had in mind, to record the data for me on blanks provided for the purpose.

I have said that there was a dearth of experimental evidence regarding the action of alcohol in diseased persons, but this lack is much more striking in certain directions than in others. Certain points have, I think, been pretty well cleared up, while others are still obscure. Hence it may not be out of place to sum up what may be regarded as relatively settled, in order that the unexplored regions may be made more evident by contrast.

About the food value and the digestive action of alcohol, about its effect on temperature, respiration, the secretions and the susceptibility of the lower animals to infection, there is a good deal that we may consider settled.

On the other hand, there are very few experiments upon its action on the *circulation* of the sick, or upon the protective powers of the human blood against infection.

These two problems, then, confront us:

(1) What effect has alcohol upon the circulation in sick persons?

(2) What is its effect on the power of man's blood to protect his organism against infection?

The first of these two questions I have tried to answer in the present lecture. The second I hope to attack later.

Before presenting the results of my own experiments I will endeavor to summarize what seems to me established as the result of work previous to my own.

We may treat as established the following statements:

I. ALCOHOL AND METABOLISM.

(1) In healthy persons alcohol is capable of replacing satisfactorily the fats and carbohydrates of ordinary food.

(2) It is not yet settled whether or not alcohol can replace the proteids of our customary diet.

(3) The food value of alcohol as a substitute for carbohydrates and fat is perfectly consistent with its toxic properties. It is beyond doubt both a food and a poison.

[1] Read before the Association of American Physicians, May 13, 1903.

II. THE ACTION OF ALCOHOL ON DIGESTION AND ABSORPTION.

(4) While it is in the stomach, alcohol disturbs the digestive processes to a greater or less extent according to its concentration.

After absorption (either from the stomach or from the intestines) alcohol acts upon the stomach through the nervous system, and exerts a favorable influence both on its secretions and on its motility. But the nervous system is soon blunted to its influence, so that more and more is needed to influence digestion.

(5) On the intestinal absorption of food alcohol has no considerable influence so far as is known.

III. ALCOHOL AND DIURESIS.

(6) In healthy persons and in renal or cardiac disease, alcohol has no considerable effect as a diuretic. The free diuresis often seen after beer drinking is due in part to the water ingested and in part to the CO_2 and other non-alcoholic constituents of the beer.

IV. ALCOHOL AND DIAPHORESIS.

(7) The experimental data are not conclusive, and great individual differences exist, but the majority of experiments seem to show that alcohol diminishes sweating in healthy persons.

V. ALCOHOL AND RESPIRATION.

(8) Practically all experiments show that under the influence of alcohol a larger volume of air passes through the lungs. This is especially marked in fatigued persons. There is, however, no increase in the amount of O_2 absorbed or in the amount of CO_2 given off.

The patient is made to do more work in breathing without getting any known benefit from it.

ALCOHOL AND PULSE RATE.

Lichtenfels and Frohlich [1] found first a decrease, later an increase in pulse rate.

Tscheschichin [2] and Ruge [3] noted a very marked rise in pulse.

Zimmerberg [4] could find no variation from normal. Reiss got similar results.

Mertens [5] noted no change, Martins [6] a decrease, Jacobi,[7] Duchek,[8] Hemmeter [9] no increase.

In all the experiments in which subjects have been put into an unchanging environment and conditions, the changes in pulse before and after alcohol sink to a minimum.

Wendelstadt [10] took especial pains that the persons on whom he experimented should remain quiet some time before the beginning of the test and stay in just the same position after swallowing the alcohol. With these precautions the changes in pulse rate were trifling. For a few beats the pulse rate sometimes rose a little, but soon returned to normal. Occasionally there was a slight decrease in rate. The following data may be quoted:

N. K., healthy, fasting, horizontal position for two hours before the experiment.

I.	9.30 A.M.	Pulse 54
	9.50	,, 56
	10.07	Sherry, 300 c.c. (=10℥)
	10.15	Pulse 56
	10.40	,, 56
	11.05	,, 56
II.	Same subject; same conditions.	
	8.55 A.M.	Pulse 60
	9.15	,, 60
	9.30	Brandy, 100 c.c. (3½℥)
	9.40	Pulse 57
	10.00	,, 58
	10.20	,, 58
	10.40	,, 55
	11.00	,, 60

III. Same subject after a hard day's work, and one-half hour in horizontal position.

6.40 P. M.	Pulse 64
6.55	Absolute alcohol ℥ ii diluted
7.05	Pulse 64 (subject drunk)
7.28	,, 64
7.55	,, 68
8.15	,, 64 (less drunk)
8.35	,, 68

To the finger the pulse after alcohol feels fuller and stronger, and the sphygmograph shows a tracing like the "pulsus celer" of aortic regurgitation.

BLOOD PRESSURE AFTER ALCOHOL.

Zimmerberg [11] found after putting alcohol into a cat's stomach a marked fall in blood pressure.

Gutnikow [12] experimented on curarized dogs, into whose stomachs he introduced 250 c.c. of 50% alcohol. The result was a considerable fall in blood pressure, together with a dilatation of the small arteries, capillaries, especially in the territory of the splanchnic.

The dog here used was so small (20 kilos), and the dose so enormous, that no inferences ought to be made from these experiments as to the effect of moderate doses in man.

Weissenfeld [13] reports work done in Binz's laboratory. The experiments were carried out on men with the help of v. Basch's sphygmomanometer. After 2 or 3 oz. of sherry the pulse rose in three cases from 15 to 30 mm. Hg.; in one even as much as 60 mm. Hg.

Passler [14] and Schule,[15] working with Gaertner's tonometer on a healthy man, recorded a fall from 110 to 95 mm. Hg. twenty minutes after sherry and brandy. An hour later the pressure was 115 again.

Rosenfeld [16] worked with dogs, connecting the femoral artery with a mercury manometer. He was careful to avoid the common mistakes of overdosage and over-concentration in the alcoholic solutions used, which were of 10 to 25% strength, and introduced by a tube into the dog's stomach.

[1] Lichtenfels and Frohlich: Mathemat. naturwissenschaft Kl., bd. iii. p. 113.
[2] Tscheschichin: Dubois' Arch. f. Anat. and Physiol., 1886, p. 151.
[3] Ruge: Virchow's Archiv, 1870, vol. 49.
[4] Zimmerberg: Dissert Dorpat, 1869.
[5] Mertens: Arch. de Pharmacodynam. 1896, vol. 2, p. 157.
[6] Martins: Deutsche Klinik, 1855, No. 44.
[7] Jacobi: Deutsche Klinik, 1857, Nos. 22, 26, 31, 34.
[8] Duchek: Prager Vierteljahrschr., 1853, vol. III, p. 104.
[9] Hemmeter: Transactions of the Med. Fac. of Baltimore, 1889.
[10] Wendelstadt: Ref. in Rosenfeld (*vide infra*.)
[11] Loc. cit.
[12] Zeitschr. klin. Med., 1892, vol. 21, p. 128.
[13] Pflügers Archiv, vol. 71.
[14] Congress für Innere Med., 1898, p. 438.
[15] Berl. klin. Woch., 1900, No. 33.
[16] "Der Einfluss des Alcohols auf den Organismus," Wiesbaden, 1901.

The question whether dogs tolerate alcohol better than men seems to be answered in part by the following facts:

(1) It takes the same dose *per kilo* to narcotize an average man or an average dog.

(2) It takes approximately the same dose *per kilo* to kill a man or a dog.

But to make sure that he did not err on the side of too small dosage Rosenfeld increased his doses from the equivalent of ʒ i of whiskey at a time up to the equivalent of ʒ x of whiskey.[17]

The upshot of his 300 or more measurements in 8 dogs was that alcohol has no appreciable effect upon the dog's blood pressure. He used fresh dogs with high blood pressure (152 mm. Hg.), tired dogs with low pressure (82 mm. Hg) and dogs with pressures intermediate.

The result was the same in all cases. Variations in the pressure from hour to hour were no greater than occurred spontaneously, that is, when no alcohol was given.

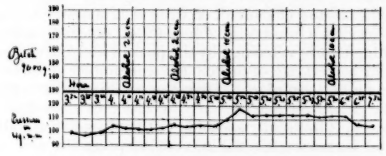


CHART I.— Blood pressures in dog after alcohol. (Rosenfeld.)

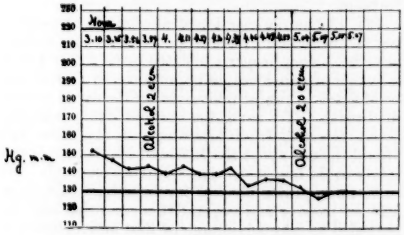


CHART II.— Blood pressures in dogs after alcohol. (Rosenfeld.

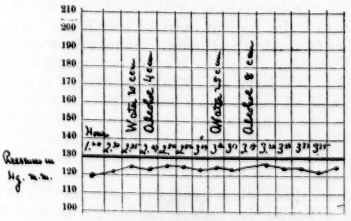


CHART III.— Blood pressure in dog after alcohol.

ALCOHOL AND TEMPERATURE.

In states of profound intoxication, belonging practically to the class of collapse states, there may be a very marked lowering of temperature. Experimentally Rosenfeld produced readings of 88.7 F. in dogs.

Therapeutic doses of alcohol given to sound men seemed to produce a slight lowering, amounting, according to the experiments of Binz's pupils, to about .7° F. In sick people the decrease was about the same. The temperature of the skin is greater than that of the rectum, a fact which seems to indicate that the lowering of the rectal temperature and presumably of that of the internal organs in general, is due to the dilatation of the cutaneous vessels.

Dumouly[18] found that no effect was produced in fever patients by doses of less than 20 gm. of absolute alcohol (= about ʒ iss of whiskey).

ALCOHOL AND THE NEURO-MUSCULAR SYSTEM.

The most recent and careful researches on this much-disputed point seem to show that in fresh healthy men the power of voluntary muscular movement is increased about 7% for the first one-half hour, after which there is decrease to a point about 5% below the normal.

By diminishing the sense of fatigue, alcohol undoubtedly enables men to push themselves for a short time beyond the limit which nature would otherwise have imposed upon them through fatigue.

ALCOHOL AND THE SUSCEPTIBILITY TO INFECTION.

Latinen found a decrease in the number of leucocytes in cases of pneumonia during alcoholic medication, and Massart and Bordet observed a negative chemo-tactic effect upon leucocyte even with very dilute solutions of alcohol.

That it increases in animals the susceptibility to infection and diminishes the animal's power of resistance has been shown so many times and in so many ways that it is not necessary to go over the evidence in detail.

In man something more or less akin to experimental evidence in this matter is furnished by the well-established fact that alcoholics are predisposed to infectious diseases, and have them in a very virulent form.

More direct and important evidence is furnished by researches designed to investigate the antitoxic power of the blood in health and in disease with and without alcohol.

Mircoli[19] compared the antitoxic power of normal human blood with that of alcoholics by testing the power of each to neutralize Maragliano's tuberculin. The blood of normal men was found to neutralize large doses of this toxin; for example, 10 cc. of this tuberculin is a fatal dose for animals of 1 kilo weight. But this animal can be protected against this dose by the injection of 2 to 3 cc. of normal human serum. The serum of chronic invalids, on the other hand, does not possess this power.

But the serum of drunkards was found to be much more strongly antitoxic than that of normal men. In one case $\frac{1}{10}$ of a cc. of drunkard's serum was sufficient to protect a kilo animal against 10 cc. of tuberculin. From these facts Mircoli concludes that alcohol is a most valuable remedy for tuberculosis, forgetting that tuberculin and tuberculosis

[17] Two cc. of alcohol at a dose for a dog of 8 kilos, corresponding to a little over ʒ i of whiskey for an adult.

[18] Paris Thesis, 1880.

[19] La Clinica Medica Italiana, March, 1900, p. 133.

are by no means the same, and that alcoholic cirrhosis and tuberculosis of the lungs or peritoneum are very frequently associated.

Nevertheless, Mircoli's results are of great interest both in themselves and as an indication of the direction in which future research should be turned.

More recently Abbott and Bergey [20] have undertaken a study of the blood reactions of normal and alcoholized rabbits by Ehrlich's methods. Their conclusions are:

(1) The daily administration of alcohol per os to rabbits reduces the amount of hemolytic complement in their blood.

(2) The diminished reactivating power of the blood of alcoholized rabbits is not due to the presence of small amounts of alcohol as such in the blood.

(3) Alcohol not only reduces the amount of complement in the rabbit's blood, but may cause at the same time a reduction in the number of free specific receptors in the blood of a rabbit artificially immunized against an alien blood.

(4) The diminished complement-content of the blood of alcoholized rabbits renders the animal more susceptible to the toxic action of an alien blood.

THE TOLERANCE OF FEBRILE PATIENTS FOR ALCOHOL.

It must have forced itself upon the notice of any one who has watched the effects of alcohol in fever cases that such patients will stand an extraordinary amount of the drug without any signs of intoxication.

For example, I recently watched a patient with typhoid in the service of Dr. F. C. Shattuck, who took for nearly a fortnight 2 oz. of whiskey every hour, day and night, that is, three pints of whiskey every twenty-four hours, without any sign of intoxication. In the same service a young girl also suffering from typhoid took 60 oz. of champagne, nearly two quarts, every day for three weeks without any of the ordinary evidences of intoxication.

This certainly proves that alcohol acts differently in disease and in health, and makes it obvious that the results of experiments with alcohol on healthy men should not be supposed to prove what its effects in sickness may be.

But because alcohol acts *differently* in disease, are we obliged to suppose that it acts *more beneficially* than in health?

That we do not smell it in the breath of typhoid fever patients, despite a dosage which would make a well person reek with it, does not point to any considerable difference in the amount burned up in the body, for even in the intoxicated states produced by alcohol in healthy persons, 98% of the alcohol is burned in the body. The alcoholic odor in the breath does not prove that any considerable portion of the alcohol is being excreted through the lungs.

Alcohol given to dogs with sugar does not make them nearly as drunk as when it is given without sugar, [21] but its harmful effects are no less marked.

That sick persons are not intoxicated even by enormous doses of alcohol gives us no evidence whatever that it is doing good, nor on the other hand is it a reason for believing that it does harm. It is an interesting but a wholly neutral fact so far as the therapeutic value of alcohol is concerned, and is important chiefly as a warning to those who tend to argue directly from the known effects of the drug in health to its supposed effects in disease.

THE PSYCHIC EFFECTS OF GIVING ALCOHOL.

(1) On the mind of the physician and of the patient's family or friends.

(2) On the mind of the patient himself.

(1) The virtues of alcohol as a stimulant have been so firmly established in the minds of the laity that both the patient and his friends are apt to be comforted by the knowledge that it is being given. It does not sound exactly like a drug, its taste is generally not disliked, and the cheering impression that something is being done, and done pretty frequently, is diffused among those who are caring for the patient, and may reach the mind of the patient himself.

By a sort of auto-suggestion, a similar impression is sometimes produced upon the physician as well. It is very hard to sit still and do nothing for the patient, and when we have no very reasonable belief in the efficacy of a drug it is a relief to the physician's mind to give *something*, especially something that is welcomed by the patient and his friends, and something of which the community generally has a high opinion. Then the soothing effect upon the patient, which the narcotic action of alcohol produces, is indirectly soothing to the physician as well, and increases his willingness to prescribe and to continue the so-called "stimulant." In short, alcohol makes physician, patient and friends more comfortable.

(2) The narcotic action of alcohol, its tranquillizing and benumbing effects upon the nervous system, have been very properly insisted on as a therapeutic influence of considerable importance by Cushny and by Meltzer in recent addresses on the use of alcohol in disease. To save the patient from worrying about himself, from broodings on the cause and apprehensions about the future of his disease, is certainly to do him a service. But we cannot, at the same time, praise alcohol for bringing the patient into so passive and vegetative a condition and expect also to take advantage of that active, fighting, determination to get well which many physicians suppose to have a real effect in combating disease. Either the tranquillity or the actively resistant will-power of the patient must be sacrificed. Whether either factor has any genuine influence on the course and outcome of disease is entirely a matter of guesswork. We have no definite knowledge in the matter, and all that I mean here to point out is, that if we are to maintain that the narcotic effect of alcohol is beneficial, we must give up the idea that the patient's will-power is an important factor in his recovery.

But although it is generally assumed that alcohol has a benumbing effect, and so a tranquillizing effect upon the patient, it has not been my experience that any such effect is always or even usually to be observed. That very striking *neutrality* of alcohol, which has been my chief lesson throughout all the other observations which I have made on its action, has impressed me and surprised me afresh in studying its psychic effect. Only in four out of the sixty-nine cases in which I have watched for

[20] Univ. of Penn. Med. Bull., Aug.-Sept., 1902.
[21] Rosenfeld: Loc. cit., p. 162.

the tranquillizing effect of alcohol has any such effect been noticeable. In the vast majority of patients as I talked with them, several times each day during a period of about six weeks, no change whatever in the prevailing mood could be determined. The down-hearted patients were not notably more or less down-hearted, the cheerful ones were neither more nor less cheerful. One patient in especial, in whom the dose of sixty ounces of champagne per twenty-four hours was suddenly cut off, showed not the slightest psychical change that I could detect.

A few of the typhoid patients seemed to sleep a larger part of the day during the time when alcohol was given them, but it was difficult to be sure that this change would not have taken place spontaneously. In one patient who became more sleepy just after the alcohol was given him, the sleepiness continued just the same for the next ten days after the alcohol was withdrawn, in fact until the temperature became normal.

Very likely finer psychical tests, such as Kraepelin employed in his studies on typesetters, would have shown that, in disease as in health, the associations and reactions necessary for the more delicate psycho-motor processes are slowed by the action of the drug; but that any constant effect was produced on the temper, mood and spirits of the patient I could see no reason to believe.

MEASUREMENTS OF BLOOD PRESSURE.

From this résumé will be seen that no considerable amount of work on the estimation of blood pressure in human beings during the administration of absolute alcohol has so far been done. Rosenfeld's observations are, it seems to me, conclusive, so far as concerns the effect of the drug upon dogs, but we cannot immediately reason from its effect in healthy or in tired dogs to its effect in sick men. Accordingly, I have undertaken a series of measurements of the blood pressure before, during and after the administration of alcohol in patients for the most part sick with typhoid fever in the medical wards of the Massachusetts General Hospital. I am epecially indebted for the opportunity to carry out these researches to the kindness of Drs. F. C. Shattuck and R. H. Fitz. My method of work has been the following:

Two instruments have been used: the Riva-Rocci machine for the estimation of the maximum or systolic pressure, and Oliver's hemodynamometer for the estimation of minimum or diastolic pressure. The working of these instruments may be explained in a few words.

The Riva-Rocci apparatus consists of a dilatable rubber armlet about three inches wide, covered with tough canvas as a support to the rubber, and arranged by means of a series of hooks and eyes so that it can be tightly fitted to arms of any size. By means of a V-tube air is blown simultaneously into this armlet and into the bulb of a mercury manometer. For inflation an ordinary cautery bulb was used.

To use the instrument we attach the armlet snugly around the patient's upper arm about two inches above the bend of the elbow, and force air into it until the radial pulse disappears. When the radial pulse is no longer felt, we note the point to which the mercury column has been forced up and record the reading in millimeters. The instrument appears to be very accurate in the sense that different observers after an equal amount of practice read practically the same independently, and that successive readings by the same observer in the same patient do not vary more than 3 or 4 mm. of mercury. It is very easy to use, and requires very little practice. It is not at all painful to the patient, as I have ascertained by many experiments upon my own arm, and no patient has complained of it in any way, although in some cases more than a dozen readings were taken in the course of a day. No bad effects upon the arm of the patient have occurred, although the cases selected were mostly typhoid, in which the thrombosis is well known to be favored. Any errors that there may be in the instrument may be disregarded in a series of comparative observations upon the same patient by the same observer, since the amount of error is presumably the same in all the measurements.

Oliver's hemodynamometer is a more difficult instrument to use. It consists essentially of a hollow rubber pad filled with glycerine and water which is put over the radial artery and through which the pulsations of the artery are transmitted to a rigid rod and thence through a ratchet and pinion adjustment to a needle moving upon a clock-face dial. By exerting pressure with the instrument through the pad upon the radial artery the needle is made to revolve and, by suitable pressure, the pulse may be obliterated. If, then, we relax the pressure upon the artery until a faint pulsation is permitted, this pulsation is represented by slight oscillations of the needle. As we relax the pressure gradually more and more, the needle upon the face of the dial has a double motion. It moves backwards towards the starting point (zero) and it also oscillates back and forth during its course. These oscillations gradually increase up to a maximum as we relax the pressure, after which if we relax it still more, the oscillations begin to diminish and gradually disappear as the needle approaches the zero of the scale. The maximum oscillations in normal persons occur between the points marked 100 and 130 on the scale. But the pressure within the fluid pad of the instrument is the same as that within the artery when its maximum oscillation is reached, and this corresponds, as Howell has shown, to the minimum or diastolic pressure. The fluid pad obviates the difficulties of applying the instrument over the uneven surface of the wrist. The soft and elastic surface of the pad adjusts itself among the structures of the wrist, and gets into contact with the artery at some point, provided the artery is palpable at all. The chief difficulties in using the instrument are (1) to hold it steady without increasing or decreasing the amount of pressure used upon the artery, and (2) to record accurately the position of the swiftly-moving needle. With well sustained pulses it is very easy to see just where the needle starts and where it ends in each of its excursions, but in the bounding pulses of febrile patients this is often very difficult. With a moderate amount of practice, however, different observers do not vary more than five points in the

scale in their readings. My instrument reads about twenty-five Hg. too high. Accordingly I subtract twenty-five from each of its readings. This prevents their possessing absolute values, but leaves unchanged the *variations* from hour to hour, which is all that I attempt here to record (see charts).

With these two instruments we have made 1,169 measurements in 58 individuals. We began by taking observations every half hour to determine the amount of range of variation at short intervals. Later we took the measurements every hour and every two hours and finally every four hours, as the variations in the smaller periods of time were insignificant, or were excited from moment to moment by occurrences, the mark of which would be as likely to escape detection in half hourly as in four hourly measurements. Thus a cry or groan from another patient in the ward, the approach of dinner or the answering of a question needing some thought would send the blood pressure up a number of points, the rise lasting only a few minutes.

We began our four hourly measurements on febrile patients recumbent in bed and upon unvarying diet. After two or three records with each instrument the patient was given either half an ounce of whiskey or an equivalent amount of absolute alcohol properly diluted and flavored. This dose was repeated every four hours for the first twenty-four hours and then doubled and continued for twenty-four hours more. After that it was, in the majority of cases, omitted, although in a few it was continued several days more in order to ascertain whether any further effect was produced after the first forty-eight hours. After stopping the alcohol we continued our readings for at least twenty-four hours and often longer.

Among the cases studied were 25 of typhoid fever, 2 of pneumonia, 2 of chronic valvular heart disease, 2 of malignant endocarditis, 2 of gonorrheal arthritis and 1 each of the following: pleuritic effusion, Addison's disease, cirrhosis of the liver, thrombosis of a leg vein, tuberculous peritonitis, myelitis and phthisis.

Summing up in a few words the total result of these 1,105 measurements: They indicate that in cases of the type studied, alcohol has no considerable effect either upon the heart's action or upon the tension of the peripheral vessels that can be measured by the instruments employed. I must confess that this result was a great surprise to me. Some effect, either for good or evil, some cardiac stimulation or some vascular relaxation, I had certainly expected to see, but the result, like all those obtained in my investigations of the effects of alcohol on other functions of the body, was practically *nil*.

The following charts and tables give further details of the work.

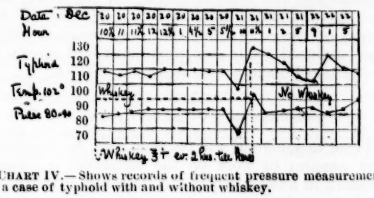


CHART IV.—Shows records of frequent pressure measurements in a case of typhoid with and without whiskey.

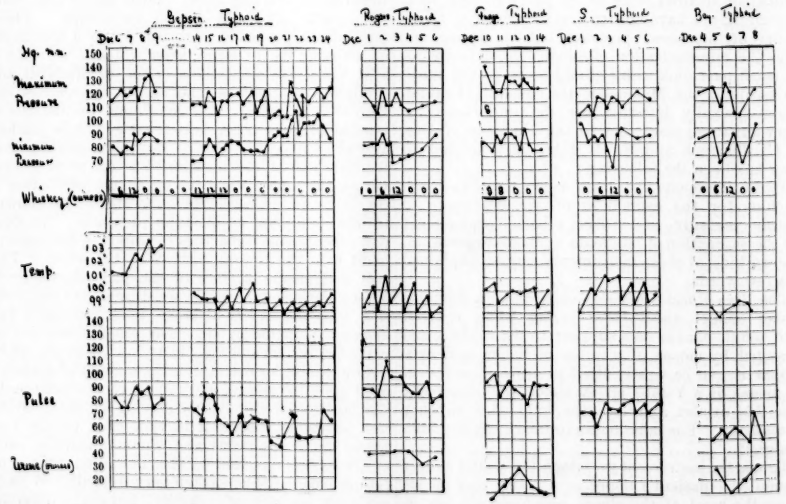


CHART V.—Variations in blood pressure measured every four or eight hours in cases of typhoid, before, during and after whiskey.

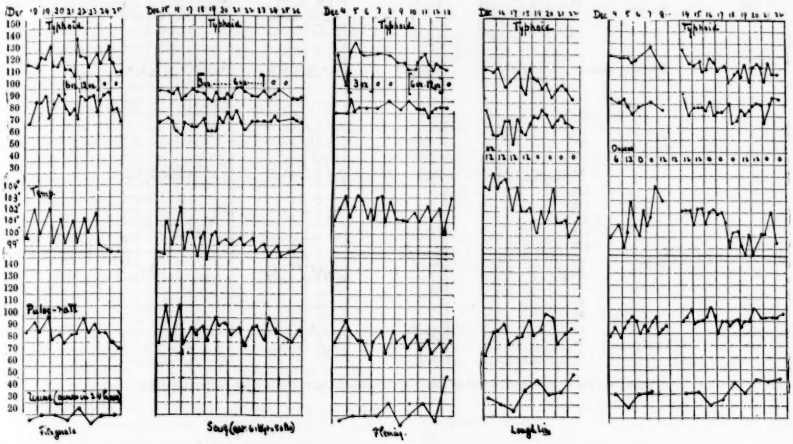


CHART VI.— Same as Chart V.

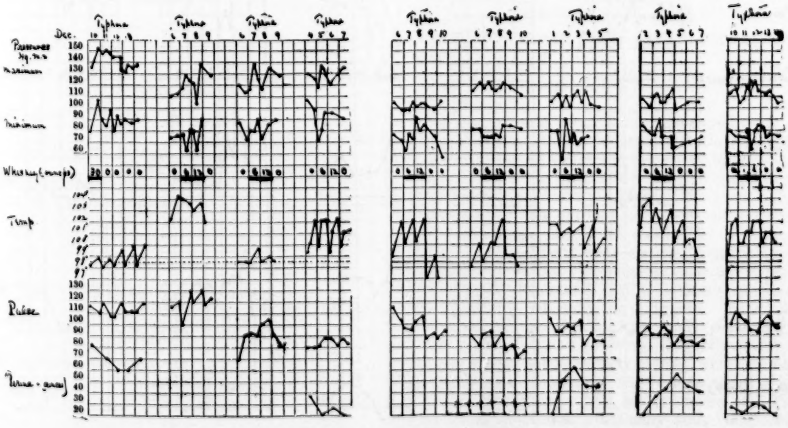


CHART VII.— Same as Charts V and VI.

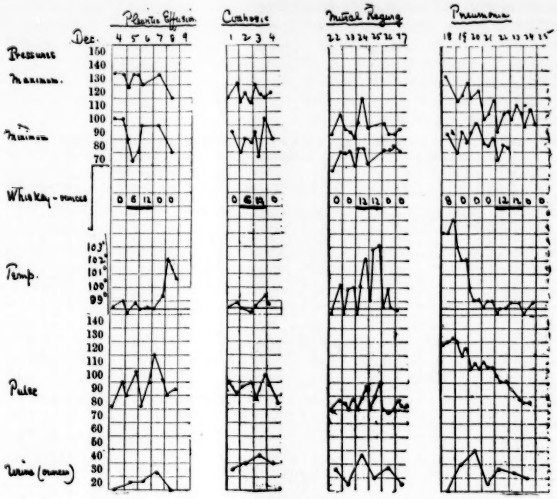


CHART VIII.— Blood pressure in various diseases before, during and after whiskey.

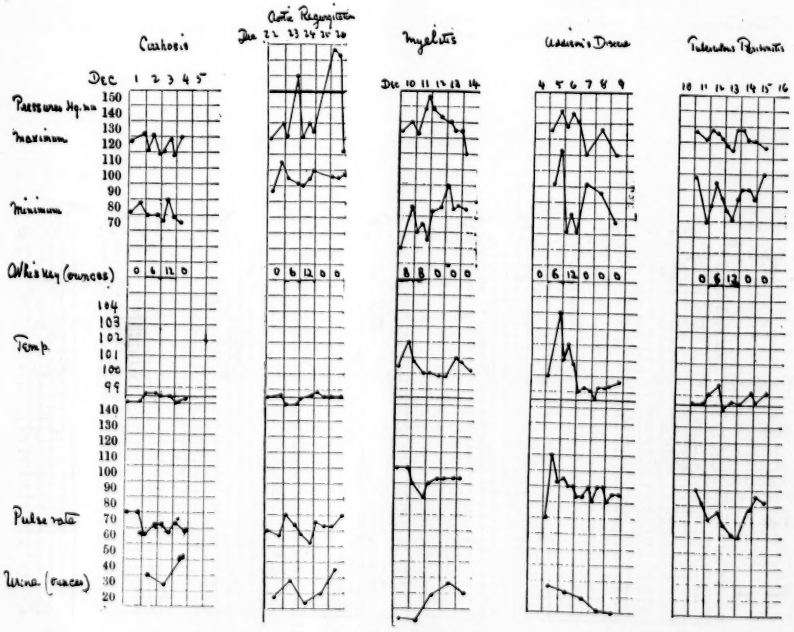


CHART IX.— Same as Chart VIII.

SUMMARY AND CONCLUSIONS.

(1) In 41 patients, mostly cases of typhoid fever, 1,105 measurements of the blood pressure were made before, during and after the administration of alcohol in therapeutic doses. Neither the maximum nor the minimum blood pressure showed any variations that could reasonably be referred to the action of the alcohol. So far as was determined by the methods and in the cases used in this research, the action of alcohol upon the circulation was *nil*.

(2) The same neutrality and apparent inertness of therapeutic doses of alcohol in relation to the temperature, pulse rate, respiration rate, appetite, sleep, delirium and secretions (renal and cutaneous) of 309 patients suffering from a great variety of diseases was the total impression derived from 2,160 observations in these cases.

(3) These observations are not interpreted as proving that alcohol is useless or useful in disease. As a narcotic and vaso-dilator it may have an important place in therapeutics.

(4) More important probably than any of the questions investigated so far is the problem of the effect of alcohol upon the power of the sick man's blood to protect him against infection and other harmful influences. The studies of Abbott and of Mircoli have begun to clear a path in this direction, and we have a certain amount of evidence relative to a similar problem in the lower animals. But as the results of studies regarding the action of alcohol upon animals or upon healthy men cannot be used as evidence of its action in sick men, there is a good field for experimental work in this direction along the lines of Ehrlich's newer methods.

TABLES.

Temperature.

Raised over .2°,	alcohol, 149 cases,	
" " "	whiskey, 12 "	Total 161 cases.
Lowered over .2°,	alcohol, 64 "	
" " "	whiskey, 13 "	" 77 "
Within .2° the same,	alcohol, 70 "	
" " " "	whiskey, 1 "	" 71 "
		309 "

Effect of Alcohol on the Temperature in Febrile Cases (100° or more).

Raised over .2,	alcohol, 29 cases,	
" " "	whiskey, 6 "	= 35 cases.
Lowered over .2,	alcohol, 20 cases,	
" " "	whiskey, 8 "	= 28 "
Within .2 the same,	alcohol, 4 cases,	
" " " "	whiskey, 0 "	= 4 "
		67 "

Pulse.

Raised over 5 beats,	alcohol, 98 cases	
" " "	whiskey, 8 "	= 106 cases.
Lowered over 5 "	alcohol, 56 "	
" " "	whiskey, 7 "	= 63 "
Within 5 beats the same:		
	Alcohol, 128 "	
	Whiskey, 12 "	= 140 "
		309 "

Respiration.

Raised over 4 periods,	alcohol, 22 cases	
" " " "	whiskey, 2 "	= 24 cases.
Lowered over 4 periods,	alcohol, 27 cases,	
" " " "	whiskey, 3 "	= 30 "
Rate the same,	alcohol, 232 cases,	
" " "	whiskey, 23 "	= 255 "
		309 "

Food.

Taken the same	212 cases.
" better	64 "
" less well	18 "
	294 "

Tongue.

The same	213 cases.
Better	42 "
Worse	20 "
Moister and more coated	6 "
	281 "

Skin.

The same	215 cases.
Moister	39 "
Drier	12 "
	266 "

Insomnia.

The same	155 cases.
Better	7 "
Worse	8 "
	170 "

Delirium

The same	150 cases.
Worse	3 "
Excited and nervous	1 "
Better	1 "
	155 "
Total number of observations	2,160 "

Clinical Department.

CLINICAL MEETING OF THE STAFF OF THE MASSACHUSETTS GENERAL HOSPITAL, FEB. 20, 1903.

(Concluded from No. 3, page 73.)

DR. E. A. CODMAN presented the following three cases:

CASE I. *Traumatic rupture of kidney; nephrectomy; recovery.*

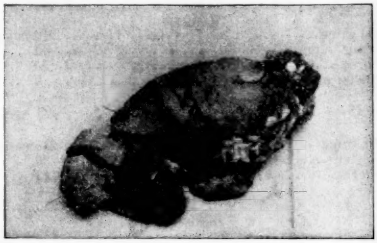
This patient was brought to the accident room on Aug. 28, 1902. He is a brakeman on the N. Y., N. H. & H. R. R., and was struck in the side by a wooden awning while climbing a ladder on a moving freight car about an hour before entrance. He managed to climb on top of the car and lay down and was soon afterward brought here in fair condition. The house officer in the accident room watched him for about an hour, and as the symptoms of internal hemorrhage rapidly increased and a catheter specimen showed clear blood, sent for a surgeon. Since the patient was in great pain, extremely pallid, rigid in the right flank and growing distinctly worse, I thought it wise to explore the kidney, which I found in fragments. I ligated the vessels which were attached to the lower half and removed it. The upper half, which was practically free, being only held by a few shreds of capsule, was removed

separately. The hemorrhage was very severe throughout the operation, which only took a few minutes.

He made an uneventful recovery.

These fragments which have been hardened in formalin give a poor idea of the amount of laceration, as they were molded together before placing them in the formalin.

The patient has been perfectly well since leaving the hospital. The scar in the right flank shows the region of the incision.



Although in this case nephrectomy was clearly indicated, I want to say that I do not believe in nephrectomy for every case of traumatic rupture of the kidney, for undoubtedly most cases get well without interference. Exploration of the kidney was indicated by the rapid increase of the symptoms of internal hemorrhage and the filling of the bladder with clear blood. When the incision exposed the kidney the hemorrhage was so great that nephrectomy was the only course, as the bleeding could not have been stopped by packing.

CASE II. *Osteo-chondroma of posterior surface of pubes; excision; recovery; no recurrence in a year and a half.*

This patient was operated on July 1, 1901. His previous history was unimportant. He was a well-developed man of twenty-seven in first-rate condition. Eight years before he had first noticed a tumor in the suprapubic region. It had grown steadily, and at the time of the operation was about the size of an orange and of an irregular lobulated shape. It arose from the posterior and upper surface of the left pubic bone and pressed the bladder backwards. One lobe had grown down the femoral canal and about the great vessels, which lay in a sort of tunnel through the growth. The cord of the left testicle also lay in a sort of tunnel in the mass. At the base the tumor was of cancellated bone, though many of the lobules were hyaline cartilage with myxomatous degeneration at their centers.

The operation is of interest on account of the anatomical relations of the structures involved. I made a crescentic incision from the left anterior-superior spine two thirds of the way to the right and a vertical incision over the femoral artery. The testicle and cord were removed from the scrotum and canal, and hung in a wet towel over the patient's left side. The insertions of the rectus and the oblique muscles, Poupart's ligament, and all the adductors of the thigh were cut entirely free from their pubic attachments and reflected. By pushing aside the peritoneum this gave easy access to the tumor, the bladder and the iliac and femoral vessels. The growth, with practically the whole left pubic bone and part of the right, was chiselled away, leaving only an outline of normal bone above the obturator foramen. The large gap thus made was then closed by returning the attachments of the muscles in their natural order, sewing the adductors of the thigh to the rectus and abdominal muscles as well as what remained of the pubic bone. A new canal was made for the cord and the testicle returned to its former pocket in the scrotum.

He made a good recovery and has remained well since. There is a slight bulging in the region of the scar, but no true hernia.

CASE III. *Intussusception in a man of twenty-four; resection of the intestine; recovery.*

This patient was brought to the hospital on Sept. 26, 1902. His history, signs and symptoms were typical of a severe case of appendicitis with a large abscess. Examination showed a large "cake" in the right iliac fossa. His bowels were said to have moved twice and there was no blood in the stools. The only symptom which I can recall that was against appendicitis was the persistent vomiting since his first attack of pain three days before. In appendicitis the vomiting is apt to be intermittent.

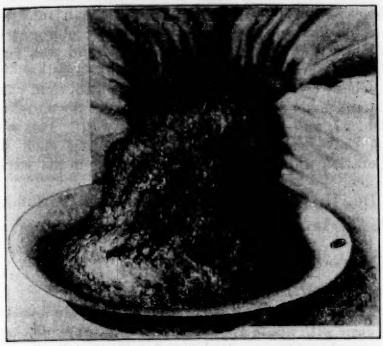
Supposing the mass in the right iliac region to be an abscess, I opened the abdomen, using Dr. Harrington's modification of the McBurney incision. The mass proved to be intussusception of the ileum almost reaching the ileo-cecal valve. It was easily resected and a simple end-to-end suture done. The patient was under ether an hour and ten minutes and barely recovered. This is the specimen. It consists of about three feet of intestine. The region where the upper segment enters is so tightly twisted that reduction was obviously impossible even after resection. The pent-up blood clot between the walls offers an explanation of the fact that the stools were not bloody, that is, the obstruction was complete.

The patient as you see is well, and thanks to the modified McBurney incision his abdominal wall is as good as ever. This is the first case of successful resection for intussusception at this hospital and one of the few recorded cases in adults, I think the oldest in point of age.

HYDATID MOLE.

DR. J. COLLINS WARREN showed a water-color of a case of Cæsarean section for hydatid mole. The drawing was made by Mr. Aitken, and showed very perfectly the gelatinous structure of the mole and the method of operation. The patient, an Assyrian, was twenty-two years of age, was regular up to last September, when from the 20th on flowed profusely for ten days. Since then, a tumor has gradually developed with pain on right side of abdomen. On entrance Nov. 28, 1902, a tumor was found reaching to the umbilicus, soft and somewhat fluctuating. Vaginal examination showed a soft and patulous os. The patient was examined by Dr. W. L. Richardson, who decided there was no pregnancy and advised exploratory

incision. This was done Dec. 2. On opening the abdomen the uterus was seen symmetrically enlarged and extending to the umbilicus. There were no signs of fetal contents and the organ fluc-



tuated distinctly — the uterus being carefully walled off. An incision was made in the median line and the contents emptied into a basin. The wound in the uterus was stitched with two layers of catgut sutures and the wound in the abdominal wall closed with interrupted sutures. The patient made a good recovery, but the uterus was not fully involuted at the time of leaving hospital on Dec. 26. A month later the patient returned to the hospital for profuse flowing, for which the uterus was curetted. She was discharged from the hospital Feb. 3, "much relieved," but is still kept under observation, as flowing threatens to recur.

CURE OF UMBILICAL HERNIA.

DR. WARREN reported two cases of umbilical hernia in stout women in whom the operation for medical cure was combined with the excision of the adipose tissue of the abdominal wall. The cases will be reported at length in a separate article.

DOUBLE HALLUX VALGUS.

The patient, a young man aged eighteen, presented himself at the hospital with enlargement of big toe joints of both feet. Had worked up to two days before entrance. His occupation was that of a clerk. The right foot had troubled him specially for a month and the left toe joint became inflamed two weeks ago, and at time of entrance there was a discharging sinus over the joint. There was also a slight ulceration of the skin over the other joint. Both joints were much swollen and the skin reddened.

After a few days of rest in bed an operation was performed, which consisted in opening the joints by a longitudinal incision about one inch in length, removing the ulcerated skin at the same time. The head of the metatarsal bone was removed in each case and the wound closed by deep catgut sutures through the synovial membrane and silkworm gut sutures through the skin. The feet were then placed in a posterior wire splint.

A slight discharge of synovial fluid continued for about three weeks and then ceased.

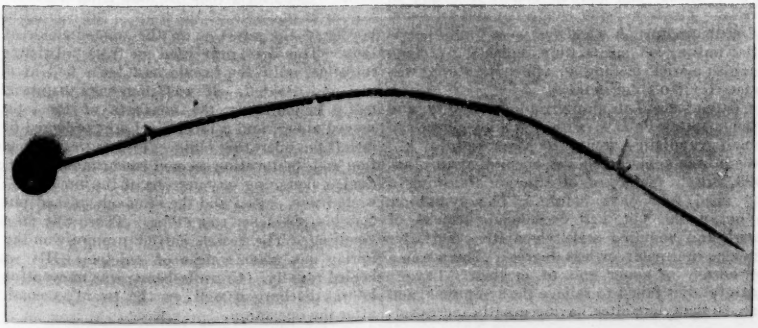
When exhibited at the clinical meeting one month after the operation the patient expressed great relief and the wounds appeared to be healed with the exception of a pinpoint scab on one toe. The patient walked about without difficulty and was ready to resume work. The deformity of the inner border of the feet had been entirely removed by the operation.

GASTROTOMY FOR FOREIGN BODY.

DR. WARREN showed a hat-pin five inches long removed from the pyloric end of the stomach.

The patient, a married woman forty-five years of age, had entered the hospital with the history of having swallowed the pin twenty-four hours before. She was suffering from melancholia. Patient stated that she was obliged to bend the pin, as shown in photograph, before being able to swallow it head first.

The next day she complained of a pricking feeling in the epigastrium, and confessed her act. There was a pin missing from her room. Beyond the slight pain there were no symptoms. An x-ray plate examination was negative in its results. Dr. Warren passed an ivory-tipped probang down the esophagus, but nothing was found there. Rectal examination was negative. A fluoroscopic examination showed a shadow about four inches long, which could be seen very distinctly at times, when



patient was standing. With patient lying on her side this shadow could not be seen. Mr. Dodd concluded that the pin was probably free in the stomach and when the patient was turned on her side the pin fell toward the median line and escaped from view behind the liver.

After twenty-four hours' observation it was decided to make an exploratory incision—although the x-ray plates had not given a positive result. There were no new symptoms. A four-inch median incision was made between ensiform cartilage and umbilicus, exposing anterior wall of stomach. The point of the pin was found protruding from the pyloric end of stomach and piercing the outer edge of the lesser lobe of the liver. An inch incision was made through the anterior wall of stomach, and the finger was introduced, but the pin could not be felt. It was then apparent that the head of the pin was in the duodenum and the greater portion of the shaft was lying between the mucous membrane and muscular wall of the stomach, having been pushed upwards by the peristaltic action of the bowel in its efforts to pass the pin around the curve of the duodenum.

The tip of the pin was now seized, it having freed itself from the liver, and was drawn upwards until the head pressed against the peritoneal covering of the stomach. A small incision allowed it to escape. The two incisions in the stomach were sewed up and the abdominal incision closed, a small wick being left in at one point. The wick was removed on the following day. The patient was fed by nutriment enemata for about a week, and left the hospital two weeks later, having entirely recovered from the operation, although her mental condition remained the same.

INTESTINAL OBSTRUCTION FOLLOWING OPERATION FOR APPENDICITIS.

[In the discussion of Dr. Beach's case of obstruction following an operation for appendicitis, DR. WARREN reported the following case, which had just been discharged "well" from the hospital.]

J. M., barber, twenty-eight years of age, was operated upon June 14, 1902, for an appendix abscess, accompanying gangrene and perforation of the tip of the appendix. Numerous colonies of bacilli of the colon group were found in the culture taken at the time, from cloudy fluid filling pelvis and in region of appendix. Culture taken from near middle line showed mixed infection in coverslip. The bowel was congested and adhesion found near cecum. A wick was passed into pelvis and the walling off wicks were replaced by clean wicks, also a wick leading to appendix stump was introduced. No stitches taken.

The patient made an uninterrupted recovery, and left the hospital Feb. 4, with "wound closed all but small granulating area at its lower end."

Patient was admitted to the hospital again Jan. 2, 1903, with a history of obstruction following a hearty meal four days before. The symptoms were not acute, but had occasional attacks of hiccough and vomiting and tympanitis, the latter continuous in greater or less degree. There was a slight hernia at upper end of cicatrix. Lavage and careful diet failed to relieve the symptoms, and on Jan. 29 the tympanites having greatly increased, Dr. Warren opened the abdomen through a six-inch incision, parallel to line of old scar on either side. A band was found extending from the peripheral surface of a coil of small intestine to the old cicatricial area in the right iliac fossa. Beneath this band another coil of small intestine was caught and its lumen practically obliterated. While withdrawing this loop, the band was ruptured. The wound was brought together by stitches throughout its entire length, and the patient made an uneventful recovery. Seen to-day, Feb. 24, and pronounced entirely well This was the only case of obstruction following such an operation which Dr. Warren had had in his experience.

DR. H. H. A. BEACH next showed the following cases:

INTESTINAL OBSTRUCTION FROM A TWIST AND A TIGHTLY CONSTRICTING BAND.

The patient, a boy of sixteen, entered the hospital in June with acute appendicitis. The appendix was removed and the cavity drained. He was discharged well, but re-entered in July, for abcess in the wound, which was opened and drained. Rapid healing followed. Since leaving the hospital he has enjoyed good health, with the exception of occasional attacks of indigestion. Three days ago he had what was called an acute attack, with general abdominal pain, gradually increasing in severity, becoming sharp and paroxysmal. He vomited first food, later, greenish material, and on the morning of re-entrance to the hospital a dark brown fluid. The bowels had not moved from the beginning of the attack, though cathartics had been freely used. I found the abdomen distended and tympanitic. There was no muscular spasm or tenderness. Shifting dullness in the flanks. No induration could be detected. The legs were flexed, and there was considerable pain. Pulse 120, regular, of fair volume and tension. Bulging of anterior rectal wall, no ballooning. Heart and lungs normal. A high enema was given without a result.

Laparotomy five inches to the right of the median line at the outer edge of the rectus muscle — two pints of clear serum evacuated. A loop of small intestine, much distended and reddened, was found on the right side, the loop formed by a complete twist of the gut, and held in this position by a firm band, extending across the loop from the intestinal border of one side of the loop to the corresponding border of the intestine on the opposite side of the loop. This band prevented me from untwisting the intestine, until the former had been tied at either end and divided. It was then easy to untwist the coil. Immediately the contents of the intestine moved along, and a fecal discharge occurred before he left the operating table. The degree of constriction and its duration seemed remarkable in not producing sloughing or gangrene of the intestine. The wound was closed and the stomach washed out before his recovery from ether. There was no more vomiting. The bowels moved promptly on the following day after a dose of calomel. His wound healed rapidly. Convalescence was uneventful and he was discharged well, on the twenty-second day after the operation.

NEEDLE IN KNEE-JOINT.

The x-ray plate shows about half of a needle imbedded in the inner condyle of the femur of a young child. A few hours before entering the hospital, he had, by kneeling upon some cloth holding the needle, driven it directly into the bone and broken it, the part holding the eye being left outside the joint. Through a small incision the joint was opened and a black spot corresponding to the fractured end of the needle found flush with the cartilaginous surface. A disk of cartilage with the needle insertion as a center was removed, when the needle projected sufficiently for the forceps to grasp and extract it from the bone. The joint was closed and recovery prompt.

APPENDECTOMY INCIDENTAL TO SALPINGECTOMY.

The specimen is presented to illustrate the attachment of the appendix to the Fallopian tube of the right side by inflammatory adhesion — and the probability in such cases of more serious consequences from appendix complications in delayed operations than in those where the tubes alone are involved.

ABDOMINAL INJURIES WITHOUT EXTERNAL SIGNS.

The lack of general interest in these injuries, which are commonly classified under the head of internal injuries, though they are much more frequent than penetrating wounds, suggested the report of the following case. Their expectant treatment involves great responsibilities, for if hemorrhage or extravasation occur, early infection or exhaustion may soon place the patient beyond the reach of surgical interference. In the first case occurring in my service there were multiple fissures of the liver, kidneys and spleen, with extensive sub-peritoneal hemorrhage; the injury caused by a fall of sixty feet. In the second there was a longitudinal tear of two inches in the small intestine, caused by the kick of a horse. In Dr. Mixter's case there were no external signs, but the small intestine was torn apart and the two ends separated three inches.

In Dr. Greenough's case there was no symptom but muscular retraction, and the small intestine had been torn open toward the mesentery.

The patient presented had a fall of eighteen feet, forty-eight hours before reaching the hospital. A ladder upon which he was standing suddenly broke. He could not tell how he struck the ground. Two lower ribs on the right side were fractured in the anterior axillary line. He had severe abdominal pain not localized on the following night, and vomited once. There had been no movement of the bowels for two days, though enemas and cathartics had been freely used. Pulse 84. Temperature 99. White blood count 29,000 at time of admittance. The abdomen was much distended, tympanitic, painful and tender throughout. No spasm except in gall-bladder region near broken ribs. No dullness in flanks. Rectal examination negative. Urine normal. Three hours later, about the same condition, with increasing dullness of flanks. Result negative from high injection.

From the pain, tenderness, distention, obstruction, it seemed judicious to explore the peritoneal cavity for possible visceral injury. Laparotomy of six inches in the median line. Intestines much distended and injected, no free fluid, collapsed bowel blood or fecal extravasation. The wound was carefully closed. A large fecal evacuation occurred on the following morning, and much relief to all of his symptoms followed the examination. His recovery and convalescence were uneventful. Whether the injury had the effect of displacing the intestines in such a way as to produce a kink, obstructive in character, I do not know, but no other explanation of the apparent relief from interference seems more reasonable.

THEOCIN AS A DIURETIC.

DR. R. H. FITZ presented some charts showing the results of the use of theocin. In a case of adherent pericardium, with ascites, the flow of urine was at once increased from 15 to 90 oz. when 5 gr. of theocin were given three times daily. In a case of arterio-sclerotic myocarditis 5 gr. doses of theocin increased the secretion of urine from 25 to 90 oz. But little effect followed its use in a cardio-renal patient, while in one with chronic diffuse nephritis 5 gr. doses, three times daily, increased the flow from 20 to 90 oz.

IDIOPATHIC DILATATION OF THE COLON. PHANTOM TUMOR.

The patient, a neurasthenic and hysterical single woman, twenty-four years old, had been operated upon on account of a floating kidney, but without relief. When lying on her back there was nothing abnormal in the appearance of the moderately distended abdomen. As the head and shoulders were raised the contraction of the recti muscles caused an asymmetrical, tympanitic tumor to project in the lower abdomen, bulging especially in the right iliac fossa. The oblique muscles were flaccid. The deformity also was apparent when the patient stood.

OBLITERATION OF THE INFERIOR VENA CAVA.

The specimen from the patient with dilated veins from obstruction of the inferior vena cava shown at a previous meeting had been prepared by DR. JOHN WARREN and was exhibited. Just below the entrance of the hepatic vein there was a complete obliteration of the inferior cava about a half inch long. From this point to the pelvic brim the vein was dilated somewhat and filled with a laminated, in part decolorized thrombus.

The femoral vein for some two inches below Poupart's ligament was transformed into fibrous tissue and could not be distinctly isolated. The collateral circulation was afforded by distention of the spermatic veins and of the superficial veins of the abdominal wall, but especially by the greatly distended azygos veins. The upper portion of the right azygos vein was nearly as large as the forefinger.

CASE OF PAGET'S DISEASE,

from Dr. F. C. Shattuck's wards, was shown by DR. RICHARD C. CABOT. This patient knew of his trouble simply from the bowing of the legs. It has been going on for three years. The x-ray shows that not only are the tibia and femur affected, but

the smaller bones of the foot and the bones of the arm and the clavicle, of which he was not aware. I have here some x-ray plates which show the thickening of some parts, and decalcification of some others. In the hospital, when he is sitting down or lying down, he is very comfortable, but when he tries to stand he gets very tired.

This disease used to be called very rare. Up to 1901 only seven cases had been reported in America, but since Dr. E. A. Locke and Dr. Joel Goldthwait have looked it up, a number of cases have come to light, so that Dr. Locke, who is making a careful study of the disease, has notes of twenty-one cases living in and about Boston.

The next case is one of gastric ulcer in a child of eight years. It was accompanied by fever, at the times of bleeding, as you will notice by this chart. We have looked over the hospital records, and find that out of 487 cases of gastric ulcer there have been 4 cases under fifteen years; 14, twelve; 10, eight, respectively, this child being eight years of age. Before the child came into the house she lost about a quart of blood from the mouth. Since coming in here has had one or two small hemorrhages. The points of interest are, first, that the girl is so young; second, that hemorrhage each time is accompanied by fever, and that it was some days before it came down to normal. Of course we do not know that it is gastric ulcer; but there were tarry stools and vomiting of blood, and we have no other explanation as yet.

NITRIC ACID IN THE STOMACH.

This case of Dr. S. J. Mixter's was shown by DR. BENNER.

This case, which Dr. Mixter wishes reported here to-night, is that of a man brought to the accident room last August in a state of collapse. He had swallowed about two tablespoonfuls of nitric acid, mistaking it for gin. After two weeks he was discharged from the hospital much relieved. He came back about three weeks after his discharge very much emaciated. He was able to swallow, but unable to retain anything. Dr. Mixter operated on him about seven weeks after and found the pylorus completely obstructed. He did a gastro-enterostomy. The man after the operation weighed 100 pounds. He is now able to eat anything, and weighs 175 pounds.

CLINICAL MEETING, FEB. 20, 1903.

(1) *J. J. Putnam:* Insular Sclerosis, 2 cases; Charcot's Joint, 2 cases. (2) *A. K. Stone:* Aneurism, 2 cases; Syphilis of Liver, 2 cases; Phthisical Cavity (Remarks Dr. Bench). (3) *Dr. Cotman:* Intussusception; Rupture Kidney; Osteochondroma of Pubes. (4) *Dr. Warren:* Umbilical Hernia; Hydatiform Mole; Hallux Valgus. (5) *Dr. Beach:* Obstruction after Appendix; Needle in Knee Joint; Abdominal Trauma with Obstruction (*read*) (Remarks Dr. Warren). (6) *Dr. Fitz:* Charts of Diuresis; Dilatation of Colon; Vena Cava Obstruction. (7) *Dr. R. C. Cabot:* Gastric Ulcer in Girl of Six; Paget's Disease. (8) *Dr. Benner* (for Dr. Mixter): Nitric Acid in Stomach.

A CENTENARIAN. — Mrs. Georgiana Witham, of Epping, N. H., died last week at the age of one hundred and five years. She was born in England in 1797, and came to America in childhood; she married her fourth and last husband in her ninety-seventh year.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

SEVENTEENTH ANNUAL MEETING, HELD IN WASHINGTON, D.C., MAY 12, 13 AND 14, 1903.

(Concluded from No. 3, page 79.)

SECOND DAY — (*continued*).

PERIPHERAL PALSIES FOLLOWING MANUAL REPLACEMENT OF THE CONGENITALLY DISLOCATED HIP.

DR. HENRY LING TAYLOR of New York read this paper. He said that since Dr. Lorenz' visit to this country more force had been used in the reduction of this dislocation and in stretching the contracted tissues, and the position of retention had been more extreme. In the cases that he had observed in the past three or four months total paralysis of the quadriceps had been a not uncommon sequel of the operation, and in two instances total paralysis of the muscles supplied by the anterior tibial nerve had been noted. These peripheral palsies were a common cause of the difficulty experienced by some patients in walking after the operation. Nine cases were reported.

DR. ROSWELL PARK of Buffalo, in opening the discussion on the foregoing papers, pointed out the folly of calling this rather formidable method a "bloodless" one.

DR. JAMES E. MOORE of Minneapolis spoke in the same vein, calling attention to the attendant dangers and to the probability that some of these cases would do better from clean, cutting operations.

DR. V. P. GIBNEY of New York also took the position that this method was one fraught with considerable danger.

DR. N. M. SHAFFER of New York said he did not consider the Lorenz operation any more brutal than osteoclasis.

DR. GEORGE B. PACKARD of Denver showed skiagraphs of four of the six cases that had been operated on in Denver by Lorenz. Two of these skiagraphs showed the hip in perfect position, two others showed anterior transposition.

DR. JOHN RIDLON of Chicago was of the opinion that the Lorenz operation was the best known single operation for this class of cases. Of the 21 cases upon which Lorenz had operated it was already known that in six replacement had not been secured, and that in two out of the six fracture of the femur had occurred. He had taken the plaster off four other hips, with the following results: (1) In a child of four the hip was in anterior transposition and the joint quite loose; (2) in a child of four there was anterior transposition with a firm joint; (3) a double dislocation, one hip appeared to be in the socket; (4) there was a fracture through the neck of the other femur, and that bone was on a level with the greater trochanter and posterior and to the outer side of it. In one case in which replacement had been effected the perineum was torn.

DR. B. S. MCKENSIE of Toronto called attention to the fact that Lorenz did not claim that his was a perfected operation, and that he had heard Lorenz make the statement that in double dislocations the

result should be successful in 25%, and in single dislocations in about 50% of the cases.

DR. ARTHUR J. GILLETTE of Minneapolis said that it was generally assumed that congenital dislocation of the hip was very disabling, but that such was not by any means always the case.

DR. DEFOREST WILLARD of Philadelphia said that since Lorenz' visit he had done the operation with better results than before. The fact that congenital dislocation of the hip was associated with a defect both of the acetabulum and of the femoral head and neck made it very probable that within a year after the child began to walk many of these cases would relapse. The method under discussion was far from being "bloodless," for a torn muscle bled more profusely than one incised with a tenotome. These manipulative measures would probably be reinforced in the future by division of the adductors.

DR. A. J. STEELE of St. Louis cited a case upon which Lorenz had refused to operate, yet by prolonged traction, coupled with division of the adductors, it had been found possible to reduce both hips.

SIR WILLIAM HINGSTON of Montreal expressed his delight at the impartiality and candor displayed in this discussion, and remarked that it was not Lorenz, but his method, that was on trial.

DR. BRADFORD, in closing the discussion, said that he had found the ligamentum teres present in a considerable proportion of the young children. He wished to take this opportunity to say that he was now of the opinion that in a communication made some years since he had exaggerated the importance of a folding in of the capsule as an obstacle to reduction.

THIRD DAY — THURSDAY, MAY 14.

A TREATMENT OF OSTEITIS DEFORMANS AND OSTEO-ARTHRITIS.

DR. FRANK E. PECKHAM of Providence read this paper. The paper contained a report of four cases of osteitis deformans and one of osteo-arthritis successfully treated by superficial cauterization of the skin around the diseased area. This cauterization had been done once a month, and midway between a small cantharidal blister had been applied over the spine at a point corresponding to the nerve center of the part involved.

DR. GOLDTHWAIT remarked that it was well known that counter-irritation in these cases would give relief, and that for a long period the disease would remain quiescent; hence he thought the treatment advocated in the paper had effected only temporary benefit.

AN UNUSUAL CASE OF POTT'S ABSCESS.

DR. STEWART LEROY MCCURDY of Pittsburg reported this case, the essential feature of which was the incision of the abscess below Poupart's ligament and the demonstration by means of injections of methylene blue of a direct communication. The patient freely expectorated the colored matter.

BONE WIRING FOR RECENT AND UNUNITED FRACTURES, WITH REPORT OF CASES.

DR. MCCURDY also presented this paper, together with an instrument used to cut the ends of the bone. The chief points were: (1) Wiring of bone while the ends remained down in their normal position, thus reducing the disturbance of the periosteum to the minimum, and preserving nutrition and preventing necrosis; (2) the use of iron, a metal naturally present in the system, for silver, a foreign substance; (3) the anchoring of the fragments of bone to external bridge work, with the object of retaining them in position during repair.

A FURTHER STUDY OF THE MECHANICS OF ROTARY LATERAL CURVATURE OF THE SPINE.

DR. R. W. LOVETT of Boston was the author of this paper. He said that he had succeeded in demonstrating by experiment that the vertebral bodies when deprived of the articular cartilages acted mechanically as any flexible rod permanently bent in one plane. It could not, therefore, be bent to one side without twisting, neither could it be rotated or twisted without acquiring a lateral curvature. A left lateral curvature was acquired by twisting to the right, and the reverse by twisting to the left. This curve was constant and marked. It seemed possible that this connection of twisting and lateral curvature might explain certain features of scoliosis, and that both active and passive twisting movements might be used in the treatment of distortion. It was not yet possible to state the therapeutic value of this method in cases having fixed curves.

TREATMENT OF LATERAL CURVATURE OF THE SPINE.

DR. GWILYM G. DAVIS of Philadelphia read this paper. He said that as methods of treating lateral curvature were at present in a transitional stage it was of value to record personal experiences. He advised confining the patient to bed for a large part of the time, with the object of overcoming body weight. While the patient was in bed an effort should be made to assist the straightening of the spine by the use of position, weight extension to the head and by the lateral pressure of bands. The patient should rise daily and take suitable gymnastic exercises; and walking cases should not only have the exercises, but, if the deformity were marked, should wear braces.

A CONSIDERATION OF THE PROPER ARRANGEMENT OF THE CLOTHING IN GROWING CHILDREN WITH REFERENCE TO THE PREVENTION OF FAULTY ATTITUDES.

DR. J. E. GOLDTHWAIT of Boston presented the results of a study he had made of this subject. He pointed out that the normal position, with the shoulders square, could not long be maintained if the clothing, representing a weight of from three to five pounds, were supported on the tips of the shoulders, as was commonly the case. This defect in dress led to stoop shoulder, flattening of the chest, protrusion of the abdomen and of the head, and consequently led to muscle strain, particularly of the spinal muscles, weakness, and frequently to lateral curvature. He exhibited several different styles of garments commonly worn by children, and pointed out the good and bad points in each. The point to remember was that when the clothing was supported on the base of the neck, and not on

the tips of the shoulders, this muscle strain was avoided. In the adult male the weight of the clothing was borne on the base of the neck, if the suspenders were properly adjusted.

SPASTIC PARALYSIS. — SPASTIC PARALYSIS TREATED BY TRANSPOSITION OF THE HAMSTRING TENDONS.

DR. BERNARD BARTOW of Buffalo reported a case of this kind. The patient was a boy of eleven years with spastic double hemiplegia, involving especially the lower extremities. The spasticity had been first noticed at the age of three months. There was associated structural shortening with spasticity in the hamstrings, and the flexors and adductors of the thighs and the leg groups were strongly spastic during movements. The patient could not stand erect or maintain the sitting position except with difficulty. The development of the child was backward, and mentality was enfeebled. On June 9 and 20, 1902, he had operated, transplanting the hamstring tendons to the quadriceps, and correcting the malposition of the knee. This treatment was followed by rapid mental improvement, and extension power in the quadriceps was apparent after three months. Five months after the operation the patient was able to walk with the aid of crutches, and four months later he was able to walk three quarters of a mile. Before the operations he had never been able to walk in the usual way.

THE SCOLIOTONE, A MACHINE FOR ELONGATING THE SPINE AND LESSENING THE ROTATION IN LATERAL CURVATURE.

DR. COMPTON RIELY of Baltimore exhibited this apparatus, and presented a paper. The author reviewed the anatomy, mechanics and pathology of scoliosis. He was of the opinion that the muscles of the back had been unjustly accused of being responsible for the production of scoliosis. There seemed to be almost invariably in these cases an asymmetry in the two sides of the pelvis, a fact which had not received general attention. The anterior superior spine was commonly half or three quarters of an inch higher on the convex side. Attention was called to the importance of obliterating mechanically the element of lordosis as a preliminary to the lessening of the lateral rotation deformity. In the scoliotone the direction of the correcting force was adaptable equally to the lateral deviation and rotation, or chiefly to one or the other element.

HOME APPARATUS FOR FORCIBLE CORRECTION OF LATERAL CURVATURE.

DR. R. W. LOVETT exhibited a simple and cheap device intended to be used at home for the forcible correction of such deformities.

DR. A. B. JUDSON of New York opened the discussion. He said that a brace applied to produce antero-posterior pressure would be useful in treatment, although not practically efficient for absolute reduction of the deformity. A column, curving antero-posteriorly and at the same time laterally, might be said not to have two curves but rather one, partaking of antero-posterior and lateral qualities. This was not necessarily attended with rotation.

DR. B. S. MCKENSIE remarked that the maximum force could be applied by suspending the weight entirely by the spine and applying a lateral force by means of a girdle until the body was drawn to an oblique position represented by an angle of 45° or 50°.

DR. N. M. SHAFFER suggested a new operation for arresting the progress of the deformity by producing a synostosis in the contiguous articular processes.

BREAKING DOWN OF THE FOOT IN TRAINED NURSES. A SERIES OF 500 OBSERVATIONS ON NORMAL AND DISABLED FEET.

DR. R. W. LOVETT of Boston presented this communication, based on an experience in the observation of the nurses entering a large general hospital during a period of eight years. He found that the foot broke down in about 60% about two months after entering the school, and that whereas the milder cases could be relieved by the use of felt pads and foot plates, the more severe ones required to rest in bed for a time. The only element that had assisted him at the first examination in predicting the resisting power of the feet in a given case was the extent of bearing surface as seen through glass. The breaking down of the feet was largely due to general causes, and could be partially prevented by the wearing of proper shoes.

OFFICERS AND PLACE OF MEETING.

President, DR. REGINALD H. SAYRE; First Vice-President, DR. J. E. GOLDTHWAIT, Boston; Second Vice-President, DR. G. G. DAVIS, Philadelphia; Secretary, DR. JOHN RIDLON, Chicago; Treasurer, DR. E. G. BRACKETT, Boston.

The next meeting will be at Atlantic City in June, 1904.

Recent Literature.

Obstetrics. Volume V, in the Practical Medicine Series of Year-Books. Edited by REUBEN PETERSON, A.B., M.D. Chicago: The Year-Book Publishers. April, 1903.

The present volume of obstetrics is one of a yearly series of ten, issued at monthly intervals, and covering the entire field of medicine and surgery. A similar volume on obstetrics in the same series was favorably reviewed in this column a year ago, and the present work covers the field since the publication of last year. The same general plan has been followed by the editor of abstracting important articles on obstetrical subjects, as they have appeared in the current periodicals in English and foreign languages. The editor has endeavored to make the two volumes supplementary, the one of last year and this year, and consequently those subjects considered at length in the former have been given but little space this year, and *vice versa*. Very few comments on the different articles are made by the editor. The book is of especial value to those particularly interested in the subject of obstetrics as well as to the general practitioner, as an epitome of the year's progress.

THE BOSTON

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MEDICAL LEGISLATION OF 1903.

DURING the legislative session of the General Court of Massachusetts, which closed on Friday, June 26, several acts were passed which are of greater or less interest to the medical profession of the State. None, however, of this character were enacted during the first four months of the session, the first act having any interest to medical men being Chapter 305 of the Acts of 1903, which is entitled "An Act Relative to Returns of Records of Deaths by Clerks of Cities and Towns." This act provides that the clerks of cities and towns shall transmit returns of deaths to the Secretary of State monthly, instead of after the close of the year as heretofore. This is entirely in harmony with the advice of the census authorities at Washington, as presented in their recent pamphlet, urging a uniform system of registration in the different states, and will tend to make the work of the central office more efficient and more prompt in its collection and publication of registration material.

Chapter 306 is entitled "An Act Relative to Infected Articles," and is a modification of a very old law which was enacted in 1751. It provides that "for any article of furniture or wearing apparel ordered to be destroyed by an order of the Board of Health the city or town may recompense the owner to an amount not exceeding fifty dollars." This refers, in the words of a preceding section, to articles "infected with any disease dangerous to the public health."

Chapter 358 provides for an investigation by the State Board of Health "of the dumping of garbage and rubbish in the harbors and along the seacoast of Massachusetts Bay." The board is authorized by this act "to report its findings to the General Court, with such recommendations as it may deem expedient to provide for the inspection and regulation of such dumping, and to prevent the strewing of the shores with offensive material, whereby a nuisance is created."

Chapter 361 is one of the many acts relating to food inspection, and provides for definite penalties for fraudulent sales of so-called "renovated butter," varying from $25 to $500, or imprisonment, according to the extent of the crime and the discretion of the judge in whose court the victim happens to be arraigned.

Another act of the same class, Chapter 367, provides that employees or clerks engaged in selling food or drugs shall not be punished for violation of the adulteration acts "unless such violation was intentional on the part of the said employee."

Chapter 383 is entitled "An Act Relative to Separate Systems of Drainage," and provides for a definite separation of storm waters and surface water from the sewage of cities and towns, wherever separate sewerage systems exist.

Chapter 400, entitled "An Act Relative to the Care of the Insane," provides that the State Board of Insanity may by agreement with the local authorities, and at a limited cost for care and treatment, "place insane persons of the chronic and quiet class in the almshouses of cities and towns, under the care of the proper local authorities."

By the provisions of Chapter 467 an additional annual appropriation is made of $1,000 for the enforcement of the acts relating to food and drug inspection. This appropriation was made on account of the act passed last year requiring the State Board of Health to conduct the work formerly done by the State Assayer of Liquors, for which no appropriation had been made in 1902.

The enactment of Chapter 480, which received the Governor's approval and became a law on the last evening of the legislative session, deserves more than a passing notice. This act is entitled "An Act Relative to the Production and Distribution of Antitoxin and Vaccine Lymph," — and provides an amendment to Section 4 of the organic act, creating the State Board of Health and defining its duties, by which the board is authorized "for the use of the people of the Commonwealth, to produce and distribute antitoxin and vaccine lymph."

Early in the session of the previous year, and while the outbreak of smallpox was at its height, a bill was introduced upon petition of Dr. Durgin, chairman of the Boston Board of Health, providing for the production of vaccine lymph by the State Board of Health.

After several lengthy hearings before the Legislative Committee on Public Health, at which evi-

dence was presented showing the need of better provision for vaccine production than any which then existed in the State, the opponents of the measure so far succeeded in their attempts to defeat it as to secure the enactment of a resolve requiring the State Board of Agriculture to investigate the practicability of maintaining a vaccine establishment at the Agricultural College in Amherst, and to report upon the same to the next General Court, thus deferring the settlement of the question to another year.

At the beginning of the session of 1903 the question was reopened by the report of the Board of Agriculture favoring the establishment of a vaccine plant at Amherst. The Druggists' Association was represented by Mr. W. W. Bartlet, while the manufacturers of antitoxin and vaccine lymph from other states maintained a corps of agents at the State House throughout the early part of the session. On the other hand, the Norfolk District Medical Society took the initiative, and with other medical organizations secured the services of Mr. V. C. Lawrence, to whom very largely the final successful issue of the movement to give the State Board of Health authority to produce and distribute antitoxin and vaccine lymph is due. He was seconded in his efforts by the active assistance of President Eliot, Dr. S. H. Durgin and other prominent men, and by the petitions of many district medical organizations and local boards of health.

PARATYPHOID FEVER.

THE term "paratyphoid" was used first by Achard and Bensaude. In 1896 they reported two cases which clinically resembled typhoid fever, but they called them paratyphoid infections because from the urine of one patient and from a suppurative sterno-clavicular joint of the other they obtained a micro-organism which closely resembled the typhoid bacillus but was not identical in its cultural reactions. Little attention was paid to this communication until the publication, several years later, of the carefully studied cases of Gwyn and Cushing in this country and of Schottmueller in Germany. During the past eighteen months many cases of infection with the paratyphoid bacillus have been recognized. Up to February, 1903, Pratt[1] was able to collect eighty-one cases from the literature and gave the notes of three additional cases which occurred in Boston. No other cases have been reported from New England, but during the past few months instances of paratyphoid fever have been observed in places as widely separated as Havana, Prague and Chicago.

[1] Boston Med. & Surg. Journ., 1903, cxlviii, p. 137.

The bacillus is intermediate in character between the typhoid and colon bacilli, and the term "paracolon" is sometimes applied to this micro-organism, but as it is more closely related to the typhoid than to the colon bacillus, and as it produces typhoidal symptoms, the name "paratyphoid" seems preferable. The chief cultural property which distinguishes it from the typhoid bacillus is its power to form gas from glucose.

The disease cannot be distinguished by the symptoms alone from typhoid fever. All the typical features of the typhoid symptom-complex may be present. The fever usually lasts three or four weeks. Brion from his analysis of the recorded cases state that rose spots and an enlarged spleen were noted in eighty per cent. of the cases and in thirty per cent. the urine gave the diazo reaction. Diarrhea with pea-soup discharges occurred in eighteen per cent. As a rule the disease runs a milder course than typhoid fever, although the variety and frequency of the complications has been a striking feature.

Only three undoubted cases of paratyphoid fever have resulted fatally. In none of these were the intestinal lesions of typhoid fever present. The absence of general involvement of the lymphatic apparatus of the intestine clearly distinguishes the disease from typhoid. There was no ulceration or swelling of Peyer's patches and the mesenteric lymph nodes were not enlarged. In one of the cases there was a slight diphtheritic enterocolitis, while in the recent case of Lucksch there was hyperplasia of the solitary follicles of the colon, several of which were ulcerated. The lesions in these two cases resembled those of dysentery rather than of typhoid fever. As in other acute infectious diseases there is parenchymatous degeneration of the viscera and a splenic tumor. Early in the disease the paratyphoid bacilli are found in the blood in large number. They have also been obtained during life from the urine, feces, sputum, rose spots and spleen.

The source of the disease has been traced in two instances to the drinking water.

The surest way of making the diagnosis is to cultivate the bacillus from the blood. The withdrawal of 10cc. of blood from one of the large veins of the arms is a simple and safe procedure if aseptic precautions are taken. In some cases the diagnosis has been made by isolating the paratyphoid bacillus from the urine or feces or some localized lesion and then demonstrating that the individual's blood in high dilution agglutinated the bacillus. If the blood from a suspected case of paratyphoid fever agglutinates a paratyphoid bacillus in very high dilution and fails to agglutinate

the typhoid bacillus at all or only in low dilution the diagnosis of paratyphoid infection can be made. Although the blood of a paratyphoid patient usually does not clump the typhoid bacillus even in as low a dilation as 1 : 10, recent observations have shown that cases do occur in which the paratyphoid serum does clump the typhoid bacillus in as high a dilution as 1 : 100. There are two species of paratyphoid bacilli, and inasmuch as the blood of an individual infected with one species may fail to clump the other, cultures of both should be used in making the tests. The fact that the prognosis is more favorable in paratyphoid fever than in true typhoid makes a correct diagnosis a matter of practical importance.

SUPPRESSION OF THE NEWS OF SUICIDES.

IT is reported that an attempt is to be made in Cleveland, Ohio, to suppress details in all cases of suicide. Such a course of procedure is certainly justified by the facts at our disposal regarding the contagion of acts of violence. The effect of suggestion in suicide, as in lynching and other crimes against the individual or society, is a potent influence which should always be taken into account. It would no doubt be very much to the public benefit if details of such crimes or misfortunes, often drawn out to wholly unnecessary length in our daily papers, could be completely suppressed. How far this is compatible with our ideas of freedom of the press and liberty of public expression is open to doubt, but there can be no question that a very great incentive to the unfortunate occurrences which form so conspicuous a part of certain of our daily papers would be removed could a general suppression of all such news be enforced.

MEDICAL NOTES.

DENGUE IN HAWAII. — It is reported that an epidemic of dengue has appeared in Hawaii, with upwards of fifteen hundred cases, but up to this time no deaths have occurred from the disease.

TYPHOID IN ITHACA. — The report comes that typhoid fever, although naturally diminished in amount, is still prevalent in Ithaca, and that the water supply is not yet above suspicion. July 16 nine cases were reported as ill with the fever, with several suspected cases. It is alleged that the Ithaca Water Company is still serving the city with infected water through a failure to protect its watershed. Artesian wells are being driven with a capacity nearly sufficient to supply the city.

COCAINE HABIT AMONG NEGROES. — At the annual Hampton Negro Conference, which began its sessions July 15, the question of the growth of the cocaine habit among negroes was discussed by Dr. J. W. Prather. After a report on the diseases to which the negro is liable, he called attention to the alarming growth of the cocaine habit, and pointed out the fact that upwards of 200,000 negroes are addicted to the cocaine habit or the use of other narcotics. In a recent number of the *Medical Press* refefence is made to the increasing spread of the cocaine habit, and its prevalence among negroes is commented upon.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 22, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 31, scarlatina 22, typhoid fever 21, measles 22, smallpox 0.

MORTALITY REPORT. — The number of deaths reported to the Board of Health for the week ending July 18 was 215 as against 189 the corresponding week last year, showing an increase of 26 deaths, and making the death-rate for the week 18.58. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 31 cases, 5 deaths; scarlatina, 20 cases, 3 deaths; typhoid fever, 16 cases, no deaths; measles, 23 cases, no deaths; tuberculosis, 34 cases, 18 deaths; smallpox, no cases. The deaths from pneumonia were 25, whooping cough 1, heart-disease 21, bronchitis 3, marasmus 1. There were 13 deaths from violent causes. The number of children who died under one year was 52; under five years, 67; persons over sixty years, 47; deaths in public institutions, 79.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY. — A recent meeting of the Middlesex South District Medical Society was held at Pemberton, Boston Harbor, in which certain matters other than medical claimed the attention of the members.

NEW YORK.

STEVENS' TRIENNIAL PRIZE. — The Stevens' triennial prize of Columbia University for original research was awarded to Drs. L. Pierce Clark and Thomas P. Prout of New York for an essay upon "Status Epilepticus: A Clinical and Pathological Study of Epilepsy."

CLAIMS OF A VETERINARIAN SUSTAINED. — In special term at Troy on June 20, Justice Howard decided, in spite of the opposition of the State, represented by Deputy Attorney-General Church, that the State Board of Veterinary Medical Examiners

must recommend the issue by the board of regents of a veterinarian certificate to Albert L. Harris of Nassau, Rensselaer County. The question at issue was whether the examiners could refuse to report as satisfactory Harris' alleged proofs of at least three years' practice of veterinary medicine prior to the year 1890, and Justice Howard's decision seems to make the applicant's affidavit to that effect sufficient. The case is important as probably involving all similar cases of medical practitioners, and it is said that the State is likely to appeal.

ST. JOHN'S GUILD FLOATING HOSPITAL. — The first trip of the twenty-eighth season of the St. John's Guild Floating Hospital took place on July 7. About a thousand women and young children were carried, and a number of very ill children were left at the Guild's Seaside Hospital at New Dorp, Staten Island. Owing to lack of sufficient funds, but one boat instead of two will be operated this season.

A CENTENARIAN. — Thomas Thompson, a negro who was born a slave in Moonachie, N. J., died at his home on the Hackensack Meadows, Hudson County, N. J., on July 8, at the reputed age of one hundred and two years.

DEATHS FROM HEAT. — During July 9 and 10 forty-four deaths from the direct effects of the heat, besides a large number of non-fatal prostrations, were caused in New York.

Correspondence.

MANILA LETTER.

SPECIAL CORRESPONDENCE.

THE CHOLERA SITUATION. — PLAGUE. — LOSS TO BOARD OF HEALTH BY FIRE. — LOCUSTS. — CURIOUS BELIEFS ON MEDICAL MATTERS.

THE cholera situation continues to show marked improvement. The islands are quite widely infected, but the people are more generally taking precautions and an improved sanitary organization is enabling the Board of Health to handle the situation more effectively. The amount of devastation done by the disease is gradually being reduced to figures, as a number of the Board of Health doctors are making investigations in regions from which no reports have previously come. Their figures include the entire period of the epidemic. In one daily report recently no less than 1,040 deaths were reported, but all except about 50 of these deaths occurred some months ago. The total number of deaths from cholera now reported reaches more than 86,000. A few cases occur daily in Manila, but only four or five where a year ago at this time there were a hundred deaths daily. As these cases have nearly all occurred along the water front among boatmen and laundresses, and a large part of these developed on board boats lying in certain parts of the river where there was slack water not greatly affected by currents or tides, the attention of the health authorities was called to the probability of the Pasig being the chief, if not almost entirely the sole source of infection; in one instance occurring in the Santa Ana District of Manila, five persons drank Pasig River water on June 3, and all were dead of cholera on June 5. While in a certain number of cases infected food seemed to play an essential part, and the Filipinos themselves attributed the disease to such foods. The fact of the disease occurring in certain restricted classes seemed to point to a subsequent infection of the food after it had left the markets. Investigation showed that the marine and river population usually washed their food in the Pasig River water. An elaborate system of investigation of this water as to the presence of the cholera bacillus was at once instituted by two representatives of the Board of Health working independently. Samples were collected from various parts of the river in and near Manila, and of 20 such specimens 18 showed the presence of the cholera bacilli in large quantities. The water was first tested with the "cholera red" test, and the organisms subsequently isolated. As little as one half of a cubic centimeter of river water gave in many cases a strong reaction. The bacilli were found in the slack water and particularly in the shallow reaches used as places of anchorage for cascoes awaiting employment, and were not found in the main current. In view of this discovery of the cholera bacillus in the Pasig, the Board of Health has just instituted more strict measures for enforcement of the standing prohibition of the use of Pasig water. While nearly all of the natives use water from the city supply for drinking and cooking purposes, many bathe and wash clothes and food in the Pasig, and in this way acquire the infection. Bathing and swimming is particularly an important factor, and with as little as half a cubic centimeter giving a strong reaction it is hard to see how a swimmer could avoid taking at least that much river water into his mouth, and thus acquiring an infection. The patrolling of the river by sanitary inspectors will probably much reduce the use of its waters, and proportionately decrease the number of cases of the disease. Every possible effort is being taken to prevent the contamination of the city water supply, and so far with excellent success. The sharp epidemics which have lately occurred in certain small provincial towns show what might be expected if the water supply here should become infected. In Apani, for instance, every water sample sent to Manila for analysis showed large numbers of cholera bacilli present, and the cholera mortality in that place has been very high. When the authorities at Apani were notified of the continued presence of the cholera bacilli in their water supply, they illustrated the general helplessness of the natives in respect to sanitary matters, for, on being directed to boil their drinking water and cook their food thoroughly, they promptly replied with a request that the soldiers stationed at that place be directed to distill water for their use. This is only equalled by the request of natives on the watershed of the Manila water supply, who asked that the soldiers acting as sanitary guard look after their carabao while the natives went to mass. At the present time cholera appears to be worst in the province of Albay, Luzon and in the island of Mindanao, and it would appear as if the number of deaths occurring was considerably in excess of those reported. As everywhere at this time, the disease assumes a most virulent form, and nearly all those attacked quickly die. The concealment of cases is a most serious drawback to the work of the sanitary authorities, as they are thus prevented from taking proper preventive measures before the disease has assumed an epidemic form.

The plague situation is also very gratifying and shows excellent results, due to the general inoculation of the Chinese, the catching of rats, fumigation of ships and destruction of plague houses. During the month of May there were but twenty-five cases of plague in Manila, while in Hong Kong there were nearly four hundred and fifty. For the single week ending May 23, the Hong Kong plague report showed one hundred and thirty-six cases, among them a number of Europeans. As the outbreaks in the two cities started at the same time and progressed up to a certain point at about the same rate in respect to the number of cases, it is fair to presume that the admirable showing of Manila in comparison with Hong Kong is the result of the much more strict measures instituted by the Board of Health here as soon as it was apparent that a severe epidemic was threatening. Too much credit cannot be given to Major Carter, the commissioner of health, for the excellent results obtained in cutting down plague and cholera,

and the local press is very enthusiastic over the sanitary work being done by the health authorities here. Even the natives, who are always rather loth to admit the fact that American reforms are productive of good, are beginning to recognize the excellent results attained by the health authorities.

The loss of property by the Board of Health by the recent fire has been determined at nearly $100,000, in spite of which the sanitary work has gone on with practically no interruption. Rebuilding of the buildings destroyed is going on rapidly, and with an idea to future convenience and permanence. A large amount of material for use in connection with the pail system of disposal of excreta will have to be purchased. This matter of disposal of excreta is being taken up vigorously, and a committee has been appointed to draw up plans and specifications for the establishment of sewers, disposal of excreta, improvement of the esteros and the sanitation of the low-lying submerged lands in and around Manila. As soon as the report of this committee has been rendered, it is expected that the work of improvement will be pushed as rapidly as possible.

Locusts are again devastating the fields of the provinces of Pangasinan, Tarlac and Nueva Ecija, and the health authorities are making every effort for their destruction. The ignorant peasants are ascribing the presence of the locusts to all kinds of fantastic causes. Some say that God is angered by the coming of Protestants into fields that were once under exclusive control of the Church of Rome; others, the adherents of the new Filipino Independent Church, intimate darkly that there is some connection between the appearance of the locusts and the arrival of Archbishop Guidi, the papal delegate, in the Philippines, and say frankly that there is no hope of getting rid of the locusts until Mons. Guidi departs. Some of the adherents of the Catholic Church, on the other hand, opine that the locusts are sent as a just punishment upon the Filipinos for joining the new church started by Aglipay. Still another party says that the Spanish friars are to blame, and there are many who believe that the Union Observa, a new political party, is the cause, as it was established and the locusts appeared at about the same time. These whimsical ideas are quoted to show the ignorance and credulity of the Malay mind, the workings of which are frequently beyond the comprehension of the American.

Curious beliefs of this sort are particularly entertained in respect to medical matters, and often create serious obstacles to the health authorities in their efforts to prevent disease. Instruction and education must be given before the people can be brought to a realizing sense of the necessity for following even the most elementary sanitary rules. A good example of this fact is found in a trial now going on at Iloilo of a native who circulated a story to the effect that the Americans were poisoning the wells during the late cholera epidemic there. The sanitary authorities had him arrested, and now the government is prosecuting him under the charge of sedition, alleging that his words had a dangerous effect upon peaceable conditions and were inciting the Filipinos to rise against the government. It will be much to the advantage of sanitary work here if he is severely punished if proven guilty, for the ignorance of the natives is too frequently taken advantage of by more educated individuals, who are against the government or opposed to sanitary reforms.

PARATYPHOID FEVER.

BOSTON, July 3, 1903.

MR. EDITOR: "Paratyphoid" is at present frequently applied to cases of typhoid fever, particularly in the culture reports by the Bacteriological Laboratory. The majority of the profession are uninformed as to what the term denotes pathologically, and I am one of that number, although I have consulted recent literature on typhoid, and have conferred with several of the eminent members of the medical profession in our city. Can you not serve the profession by giving them light editorially?

INQUIRER.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 11, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Scarlet fever.
New York . .	3,785,156	1,516	633	33.83	9.69	2.37	19.19	1.05
Chicago . . .	1,885,000	563	176	25.04	9.06	.71	11.07	1.42
Philadelphia	1,378,527	—	—	—	—	—	—	—
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	274	129	38.68	4.37	1.09	26.64	1.09
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,904	—	—	—	—	—	—	—
Pittsburg . .	351,745	165	99	36 36	.60	1.21	29.29	1.21
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	80	41	56.25	3.75	6.25	35.00	—
Boston . . .	603,163	202	56	20.79	7.92	.50	6.93	.99
Worcester . .	132,044	49	22	32.64	12.24	—	18.36	—
Fall River .	115,549	57	48	54.37	1.75	—	50.86	—
Lowell . . .	101,959	47	24	23.40	8.51	—	14.89	—
Cambridge .	98,639	28	10	28.57	7.14	7.14	—	—
Lynn	72,497	16	1	12.50	—	—	—	—
Lawrence . .	69,766	21	13	57.14	—	—	42.86	—
Springfield .	69,389	13	2	30.80	—	—	—	7.70
Somerville .	68,110	19	6	26.31	15.79	—	—	5.26
New Bedford	67,198	35	17	37.14	11.42	2.86	25.71	5.71
Holyoke . . .	49,286	18	11	50.00	11.11	—	44.44	—
Brockton . .	44,873	11	2	18.18	—	—	—	—
Haverhill . .	42,104	10	1	10.00	10.00	—	—	—
Newton . . .	37,794	—	—	—	—	—	—	—
Salem	36,876	12	4	25.00	—	8.33	8.33	—
Malden . . .	36,286	—	—	—	—	—	—	—
Chelsea . . .	35,876	15	6	13.33	—	—	—	—
Fitchburg . .	35,069	—	—	—	—	—	—	—
Taunton . . .	33,656	11	1	18.18	18.18	—	—	—
Everett . . .	28,620	6	1	—	—	—	—	—
North Adams	27,862	4	1	25.00	25.00	—	—	25.00
Gloucester .	26,121	9	3	—	—	—	—	—
Quincy . . .	26,043	8	1	25.00	—	—	—	—
Waltham . .	25,198	5	—	—	—	—	—	—
Brookline . .	22,608	4	1	25.00	25.00	—	25.00	—
Pittsfield . .	22,589	10	1	10.00	20.00	—	—	—
Chicopee . .	21,031	13	9	61.60	7.70	—	53.90	—
Medford . .	20,962	4	1	25.60	—	—	—	—
Northampton	19,883	6	3	—	—	—	—	—
Beverly . . .	15,302	2	1	—	50.00	—	—	—
Clinton . . .	15,161	—	—	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	4	1	—	—	—	—	—
Woburn . . .	14,300	2	—	50.00	—	—	—	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	2	—	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	5	0	60.00	—	—	—	—
Melrose . . .	13,600	3	—	—	33.33	—	—	—
Westfield . .	13,418	3	—	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	4	1	25.00	25.00	—	—	—
Framingham	12,534	1	—	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	3	1	66.67	—	—	—	—
Weymouth .	11,344	3	0	33.33	—	—	—	—
Southbridge .	11,268	4	—	50.00	—	—	25.00	—
Watertown .	11,077	2	0	50.00	—	—	—	—
Plymouth . .	10,730	4	—	25.00	—	—	—	—

Deaths reported, 3,849; under five years of age, 1,545; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,242, acute lung diseases 301, consumption 307, scarlet fever 41, whooping cough 24, cerebrospinal meningitis 12, smallpox 13, erysipelas 6, measles 34, typhoid fever 48, diarrheal diseases 686, diphtheria and croup 62.

From whooping cough, New York 7, Chicago 4, Philadelphia 5, Baltimore 2, and Boston, Lowell, Cambridge, Springfield, Somerville and Quincy, 1 each. From erysipelas, New York 4, Chicago 1, Philadelphia 1. From smallpox, Philadelphia 11, Pittsburg 2.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending June 27, the death-rate was 14.3. Deaths reported, 4,137; acute diseases of the respiratory organs (London) 150, whooping cough 84, diphtheria 44, measles 137, smallpox 13, scarlet fever 48.

The death-rate ranged from 5.3 in Ipswich to 27.2 in Great Yarmouth; London 13.5, West Ham 11.1, Brighton 8.7, Portsmouth 13.4, Southampton 12.3, Plymouth 10.2, Bristol 12.8, Birmingham 16.6, Leicester 14.4, Nottingham 17.4, Bolton 17.4, Manchester 18.0, Salford 18.6, Bradford 15.8, Leeds 12.9, Hull 15.0, Newcastle-on-Tyne 17.6, Cardiff 10.6, Rhondda 13.9, Liverpool 18.8, Hornsey 9.3, Coventry 24.4.

METEOROLOGICAL RECORD.

For the week ending July 11, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	We'th'r * 8.00 A.M.	We'th'r * 8.00 P.M.	Rainfall in inches.
S. 5	30.14	68	79	58	60	61	60	W	S W	10	12	C.	O.	O.
M. 6	30.02	70	77	63	82	87	84	S W	S W	12	9	O.	C.	.31
T. 7	30.04	75	86	64	66	51	58	N W	W	5	5	C.	C.	O.
W. 8	29.90	80	90	70	60	58	59	W	W	9	9	F.	C.	O.
T. 9	29.86	82	93	70	57	76	66	W	E	8	6	O.	C.	O.
F. 10	29.82	80	93	68	72	60	66	W	W	4	12	O.	C.	O.
S. 11	29.72	82	90	74	58	62	60	N W	W	12	7	C.	C.	O.
☞	29.93		87	67			65							.31

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JULY 16, 1903.

PERRY, J. C., passed assistant surgeon. Granted leave of absence for one month from July 14. July 10, 1903.

ROSENAU, M. J., passed assistant surgeon. To proceed to Boston, Mass.; Philadelphia, Marietta and Swiftwater, Pa.; Detroit, Mich.; St. Louis, Mo.; Milwaukee, Wis.; Chicago, Ill., and Baltimore, Md., for special temporary duty. July 10, 1903.

WICKES, H. W., passed assistant surgeon. Granted leave of absence for one day, July 17. July 15, 1903.

CLARK, T., passed assistant surgeon. Granted leave of absence for seven days from July 13, 1903, under paragraph 191 of the regulations.

MCCLINTIC, T. B., assistant surgeon. To proceed to Atlantic City and Point Pleasant, N. J., for the purpose of making physical examinations of keepers and surfmen of the Life Saving Service. July 15, 1903.

To proceed to Tuckerton, N. J., for the purpose of making physical examinations of keepers and surfmen of the Life Saving Service. July 16, 1903.

TROITER, F. E., assistant surgeon. Granted seven days' extension of leave of absence from July 13. July 11, 1903.

WILLE, C. W., assistant surgeon. To proceed to Ocean City, Md.; Chincoteague Island and Olney, Va., for the purpose of making physical examinations of keepers and surfmen of the Life Saving Service. July 15, 1903.

BARNESBY, P. N., acting assistant surgeon. Granted leave of absence for two weeks, on account of sickness, from July 2. July 8, 1903.

HICKS, W. R., acting assistant surgeon. Granted leave of absence for three days from July 14. July 15, 1903.

SWEETING, C. B., acting assistant surgeon. Granted leave of absence for thirty days, on account of sickness, from July 10. July 13, 1903.

TUTTLE, JAY, acting assistant surgeon. Department letter granting Acting Assistant Surgeon Tuttle leave of absence for thirty days, amended so as to be effective July 3. July 10, 1903.

WELDON, W. A., acting assistant surgeon. Granted leave of absence for fifteen days from July 11. July 11, 1903.

BOARDS CONVENED.

Board convened to meet at the marine hospital, Port Townsend, Wash., July 17, 1903, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Passed Assistant Surgeon J. H. Oakley, chairman; Passed Assistant Surgeon N. H. Foster, recorder.

Board convened to meet at the marine hospital, Chelsea, Mass., July 21, 1903, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon R. N. Woodward, chairman; Assistant Surgeon W. C. Rucker, recorder.

CHANGES IN THE MEDICAL CORPS OF THE NAVY. WEEK ENDING JULY 18, 1903.

H. L. LAW, surgeon, retired. Ordered to additional duty at Marine Recruiting Station, Providence, R. I.

H. L. BROWN, assistant surgeon. Appointed assistant surgeon with rank of lieutenant, junior grade, from June 29, 1903.

J. C. THOMPSON, assistant surgeon. Detached from the "Columbia" and ordered home and to wait orders.

C. H. DELANCY, assistant surgeon. Detached from the Navy Yard, Norfolk, Va., and ordered to the "Columbia."

G. R. PLUMMER, acting assistant surgeon. Ordered to Naval Station, Key West, Florida.

C. H. T. LOWNDES, surgeon. Detached from the Naval Station, San Juan, Porto Rico, and ordered home and to wait orders.

G. PICKRELL, surgeon. Ordered to Naval Station, San Juan, Porto Rico.

H. N. T. HARRIS, surgeon. Orders of July 8 modified; detached from "Glacier" and ordered to Navy Yard, Pensacola, Fla., July 18.

W. H. BUCHER, passed assistant surgeon. Detached from Navy Yard, Pensacola, Fla., and ordered to Washington, D. C., July 21, for examination for promotion, and thence to San Francisco, Cal., to take passage on "S. S. Siberia," sailing August 8 for Asiatic Station, for duty at Navy Yard, Cavite, P. I.

J. C. THOMPSON, assistant surgeon. Orders of July 14 modified; detached from "Columbia" and ordered to "Chesapeake" July 17.

A. J. GEIGER, assistant surgeon. Detached from Naval Hospital, Navy Yard, Norfolk, Va., and ordered to Washington, D. C., for duty as recorder of Naval and Medical Examining Board now in session at Naval Museum of Hygiene and Medical School.

R. B. CHAPMAN, acting assistant surgeon. Ordered to duty with Recruiting Party, No. 6.

L. H. SCHWERIN, acting assistant surgeon. Detached from duty with Recruiting Party, No. 6, and ordered to the "Southery."

F. W. TYREE, acting assistant. Ordered to the Naval Station, Port Royal, S. C.

RECENT DEATHS.

CHARLES BLODGETT, M.D., M.M.S.S., formerly of Holyoke, died at Grass Valley, Cal., June 25, 1903, aged seventy-five years.

STEPHEN JOSEPH DUNN, M.D., M.M.S.S., of Springfield, died in Hartford, Conn., June 27, 1903.

CHARLES LANCASTER, M.D., of Plainfield, N. J., died on July 6, at the age of ninety-six years. He was well known as a literary man as well as a physician.

EDWARD V. ARMSTRONG, M.D., U. S. Navy, retired, died at the Presbyterian Hospital, New York, on July 16, from the results of tropical malarial fever, which he contracted when on service in the Philippines. He was thirty years of age. At the time of the outbreak of the Spanish-American War, Dr Armstrong was practising at Mount Vernon, Westchester County, N. Y. He promptly offered his services to the Government, and in April, 1898, was appointed an assistant surgeon in the navy. During the war he served on the "Scorpion," and at its close was assigned to duty in the Philippines. Ill health necessitated his retirement and until he came to New York about the 1st of July to undergo an operation, he resided at Mount Vernon. A year ago he married a sister of Mayor Fiske of that city.

GEORGE CHAPPELL CRAWFORD, M.D., of Brooklyn, N. Y., died on July 13, at the age of thirty-five years. He was a native of Long Island and was graduated from the Long Island College Hospital, Brooklyn, in 1894.

BOOKS AND PAMPHLETS RECEIVED.

First Principles of Otology. A Textbook for Medical Students. By Albert H. Brick, M.D. Second edition. Illustrated. New York: William Wood & Co. 1903.

A Parasite Roundworm (*Agamomermis culicis*, n.g., n. sp.) in American Mosquitoes (*Culex sollicitans*). By Ch. Wardwell Stiles.

The Type Species of the Astode Genus *Hymenolesis*. By Ch. Wardwell Stiles. Bulletin No. 13. U. S. Public Health and Marine Hospital Service. May, 1903.

La Sinorchidia nelle operazioni conservatrici del testicolo. By Dottor G. Pascole. Napoli, 1903.

Addresses.

THE SHATTUCK LECTURE.

THE SOURCES, FAVORING CONDITIONS AND PROPHYLAXIS OF MALARIA IN TEMPERATE CLIMATES, WITH SPECIAL REFERENCE TO MASSACHUSETTS.*

BY THEOBALD SMITH, M.D., BOSTON.

(Continued from No. 4, page 92.)

IN 1895 the board began the distribution of coverslips in small metal capsules upon which blood films from suspected cases were to be spread, dried and mailed to the laboratory. There the films were stained and carefully scrutinized for the malaria parasite. Since the establishment of this service many cities of the Commonwealth have created their own diagnostic laboratories, and material from the cities rarely finds its way to the laboratory of the board. Many physicians do not consider it worth the trouble to send in blood films where the fever is clearly intermittent and is cut short with quinine. In spite of the incompleteness of our records concerning the prevalence of malaria, they are quite suggestive. Since April, 1896, malaria parasites have been demonstrated in specimens from twenty-eight different towns. Some of these towns have sent specimens for three consecutive years. Very few appear but once on the list. In all, 175 individual cases were found infected. What proportion of the whole these represent I am unable to state approximately; but I am inclined to believe, from conversations with many physicians practicing in the country, that they represent only a small fraction of the actual total.

Under the most favorable circumstances the study of the distribution and epidemiology of malaria remains difficult for two reasons. The most inveterate malaria carriers know how to treat themselves with quinine, and thus the very cases which might explain the incidence of intermittent fever escape the inquirer. In the second place the very people who in other matters pertaining to the public welfare may be depended on for aid are often averse to giving information concerning malaria in their neighborhood. Dr. Bronson stated in 1871 that "as a rule men having residences or building lots for sale are, on the ague question, not above deception."

In attempting to interpret the appearance of these waves of intermittent fever we must distinguish between the original sources of the infection and the local favoring conditions. The malaria parasite is not created anew by telluric and meteorological conditions, but it comes from some pre-existing parasite. Where did it come from? In the tropics malaria is potentially present at all times. With us it appears as a rule quite unexpectedly and may again disappear. The belief was quite general that upturning of the soil was responsible in some way for the disease. That it closely follows operations involving excavations such as railroad building, grading, tunneling, and the building of dams, dikes, bridges and reservoirs is well known. The immediate popular inference was the crude, unbiological notion that the germs of malaria live in the soil. While studying the appearance of malaria along the line of construction of the Metropolitan Water System in 1897 and the epidemic in Billerica and Concord several years later, I became firmly impressed with the belief that malarial infection is imported by workmen. This theory * was suggested by experimental studies in bovine malaria which showed that all cattle from endemic regions carry the germs in their blood and that the disease can readily be produced by inoculating a little blood from these healthy, immune animals from infected districts. That workmen from malarial countries may carry the parasite in the same way perhaps indefinitely was the only theory that could satisfactorily explain the observed facts. Since that time the theory that human beings are the sources of malarial infection has become firmly intrenched. Koch [46] in his Italian investigations stated that the infected human beings must be considered the starting-point of every season's new cases. Christophers and Stevens, reporting to the Royal Society from their field of investigation on the west coast of Africa, go so far as to strongly argue segregation of Europeans from the natives, as the latter are largely carriers of the parasites.† The same authors point to the analogy between malaria and Nagana or the tsè tsè disease. A fly transmits the blood parasite of this disease from apparently healthy wild game and from buffaloes to the domestic animals imported from Europe. The latter usually contract a fatal disease. While admitting the analogy I must confess that that between human and bovine malaria is much closer. The tsè tsè parasite is a flagellate and lives free in the blood. The parasites of the two forms of malaria are sporozoa, both live in the red corpuscles and have many characters in common. Christophers and Stevens, furthermore, ridicule the idea that malaria can be acquired in regions free from human beings, and they show that there are very few places even in the heart of Africa where the explorers are not near natives.

When the theory that the laborers and not the upturned soil were responsible for malaria was first formulated in my mind I felt that in so important a matter there should be ample proof. New theories or hypotheses unsupported by facts are more dangerous than none at all when promulgated, since many are contrary to fact and if applied are certain to cause damage. It seems to me that taking into consideration the

* Delivered before the Massachusetts Medical Society, June 9, 1903.

* Was tentatively published by me in 1901 (see Lit. 47 and 63).

† "These facts are of importance as they show that the generally received idea that Europeans derive malaria from pre-existing cases in Europeans requires considerable modification. This factor, it seems to us, sinks into complete insignificance beside that of infection derived from native sources." (Rep. to Malaria Committee, Royal Society, Seventh Series.)

abundant contributory and demonstrative evidence which has been accumulating since 1897 we are quite safe, in our efforts to suppress malaria, in now taking this theory as a fact and acting upon it.

If then we focus our attention upon man as the carrier of malarial infection, and if at the same time we consider that the more "seasoning" a man has had up to a certain point the more ready he may be to have gametes in his blood after infection from a less seasoned neighbor or bedfellow, we shall be able to explain many of the peculiar freaks played by malaria in our State.

The experience of the early New Haven settlers in going through a "seasoning" process is the same as that experienced by the early settlers of the middle West. Malaria was quite prevalent during pioneer days, but it slowly declined and in many places disappeared. This decline and disappearance were usually ascribed to the drainage and cultivation of the soil. This was, to be sure, an important factor in suppressing local breeding grounds of mosquitoes, but these did not originate the germs. The latter were, in part, brought by pioneers from endemic regions in the South and transmitted to the susceptible population from the North. A third factor, which in many places and probably also in the Connecticut colonies may have been the predominant one, was the Indian. The aborigines, when exposed to malaria, must have gone through the process of immunization just as to-day the native Africans are going through this process from infancy on. Even if we assume that the adult was wholly immune and free from infection, there must have been all grades of immunity in accordance with age and frequence of exposure in any given locality. With the gradual thinning out of the natives or their forced migration, and the introduction of Peruvian bark, the malaria parasite was gradually destroyed.*

Of the outbreak in western Massachusetts, at the end of the eighteenth century, the sources of infection can be discovered only by a careful study of contemporary local history with special reference to the movement of the population and the modes of life. Even without any appreciable influx of immigrants from malarial countries, our own Southern States could have furnished at any time a sufficient quota of malaria carriers to start an epidemic under favorable local conditions. Dr. Bronson, in his quest for the origin of malaria around New Haven, found what he took to be the first case in 1863 on Cove River, in West Haven, in a sawmill. "While thus occupied (repairing in the pit and about the flume of the mill) in August,1863, in a season of drought, he [the patient] was seized with a fit of ague. *He had been at the South several years before and knew the disease, but had not had it.** According to his statement, his was the first case in that quarter and the only one that year."

The last invasion of New England by intermittent fever, beginning roughly with 1870 and extending to the present, a period which has been so well described in its various manifestations by others already referred to, was largely due to the great material development which found expression in many new public and private enterprises, such as the reconstruction of railroad beds and highways, the introduction of public water supply and sewerage plants, the building of mills, and the draining, filling and grading of suburban territory and the like. In connection with these enterprises the source of malarial infection during the last thirty years I regard as coming from the Italian, Hungarian and other immigrants from endemic foci, and the contingent of colored laborers from the Southern States.

There is a remarkable coincidence between the growth of this foreign body of immigrants and the progress of malaria in New England in these latter decades. Those who have traced its movements claim that it came from the southwest, that is, from the New Jersey coast, and spread northward and eastward. I am inclined to believe that it came from the transatlantic steamers landing their passengers in New York City.

The twelfth census gives these figures of the foreign-born population from Italy in our country since 1860:

1860 . . .	10,518	
1870 . . .	17,157	
1880 . . .	44,230	
1890 . . .	182,580	Increase 312.8%
1900 . . .	484,027	Increase 165.1%

Of that same population there were males of voting age, in —

1890	70,853 aliens
1900	133,810 „

the total number of males of voting age in 1900 being 252,534. The predominance of men is seen by comparing this figure with the total Italian population given above.† Of this large contingent Mr. Prescott F. Hall [48] states that 95% are destined for New England, New York, New Jersey and Pennsylvania. What proportion of such immigrants come from malarial districts of Italy it would be impossible to determine with any accuracy. The Commissioner of the Bureau of Labor Statistics of Connecticut is quoted by R. Mayo-Smith [49] as stating that "the Italian immigrants come almost entirely from the southern districts of Italy." In 1897 I interrogated twelve Italians living in

* It is of interest to note here that the year of the introduction of Peruvian bark by the Countess of Chinchon, 1638, witnessed the planting of the New Haven Colony. Quinine, the active principle, was not used until 1820.

* The italics are mine.

† The annual immigration from Italy was 12,354 in 1880. Fluctuating more or less during the decade, it reached 52,003 in 1890. During the following years it was usually above this figure. In 1900 the total was 101,662, of which 84,346 are reported as from southern Italy. In 1902 the total reached is the enormous sum of 180,535, of which 152,915 are from southern Italy. (From figures kindly furnished by Mr. Prescott F. Hall, Secretary of the Immigration Restriction League.)

a laborers' camp in Southborough. Five claimed to have come from Naples, three from Rome, and only one from Piedmont. Three did not give the district.

Concerning the importation and use of Italian laborers, I quote from Prof. R. Mayo-Smith the following statement:

> There has been a large number of such cases (laborers imported under contract) during the last ten years (1880–1890). Many of the Italians who have worked on our railroads have been brought by contractors for that purpose. The New York Commissioners of Labor, in 1885, found a contractor in Buffalo who admitted that he had furnished four hundred foreigners to railroad companies and other corporations during the preceding year. We hear of similar cases in New Jersey, Kansas, Iowa, and Wisconsin. The Commissioner of the Labor Bureau in the last named state asserts that in the year 1886 the state was flooded with circulars from an Italian labor and construction company in New York, offering to let men for "tunneling, grading, mining, breaking stones, laying ties, repairing washouts, laying water and gas mains," etc.

Among the other foreign immigrants from southern Europe who may bring the malaria parasite and who are of sufficient importance numerically to be considered here, are those from the basin of the Danube and its tributary, the Theiss, in Hungary. The twelfth census furnishes us with the following figures of the foreign-born Hungarians:

1870	3,737
1880	11,526
1890	62,435
1900	145,714

Of voting age, there were in —

1890	38,749
1900	72,897

Assuming that these figures are fairly accurate, there were in the United States, in 1900, over three times as many foreign-born Italians as Hungarians.*

Malaria may also be disseminated by chronically infected inhabitants of malarial districts in the South when conditions are favorable, as in camps of negro laborers. A number of cases occurred in 1897 in such a camp near West Berlin, Mass.

The thousands of immigrants from malarial regions are under ordinary circumstances absorbed without causing any appreciable increase in malaria. Those that go into the crowded quarters of our large cities are not exposed to the bites of Anopheles, excepting in rare instances. Those that go into the country districts to till the soil are not likely to create a focus of malaria, as the conditions for transmission from isolated cases are not very favorable in our climate. Under ordinary circumstances, therefore, the scattering of such potentially dangerous people over a wide territory would perhaps arouse no attention or apprehension.

There are many examples of imported malaria, known to physicians of our latitude, before whose door the spread of malaria cannot be laid. The returning soldiers of the Civil and the Spanish wars did not, so far as observations go, infect their neighborhood. Sergent,[50] after studying the subject in Paris and its suburbs, states that although there are many Anopheles in the suburbs, and some chronic cases of malaria in the city from the colonies, no indigenous cases came to the notice of the author.

When, however, a considerable number of individuals remain together, work in rural districts in proximity to breeding places of mosquitoes and sleep at night in sheds built in the open country, usually near some small body of water and wholly unprotected from the attack of the omnipresent species of Anopheles, the situation is wholly different. Under such conditions, usually, some one or more individuals carry malaria parasites. These are transmitted to the non-immune or only partially immune fellow-laborers. Opportunity for the infection of mosquitoes with gametes from the blood is ample; and, sooner or later, the infected mosquitoes find their way to the very susceptible natives of the territory where the work is going on.

We are all of us tolerably familiar with the condition I have described. It is a method employed many years ago in pushing railroad construction forward in more or less unoccupied territory where it was necessary to retain the force of men near the scene of operations. This method of carrying on work in more or less densely populated districts has been in use certainly since 1870. Dr. Bronson furnishes the following illustration for the New Haven district, which I quote verbally:

> In pursuance of this agreement they drew down the water, and when the ground was sufficiently dry, in August, 1871, set about forty men to work cutting the bushes at Pine swamp, and in a tract of about twenty acres at the head of the lake. The men were occupied some four weeks cutting and burning, during which time about half the party slept on the ground near their work. Of the whole number, only one had the fever before the job was completed, but I have heard of two or three others who had it afterward.

Dr. J. F. A. Adams quotes the following letter received from Dr. C. Seymour of Northampton, Sept. 27, 1880:

> A very large percentage of the cases have occurred at a railroad station on the Connecticut River, two miles below our village. Here is located a large sawmill, employing seventy-five men; and these have quite generally suffered. Many of them have never consulted a physician, as they know quinine cures the "shakes," and get and use it accordingly.

Dr. Z. B. Adams says that in 1885 "an Italian, a laborer upon the new conduit through Farm Pond, was sent away together with several companions suffering from the fever."

I have the microscopic records of malarial infection from several laborers' camps. Such cases were usually overlooked some years ago. If discovered they were supposed to be a product

*In 1880 the number of immigrants from Hungary was 4,363; in 1890, 22,062. In 1902 the total Magyar immigration was 23,610. In the intervening years there was the usual fluctuation, corresponding with periods of industrial depression and prosperity.

of the environment, the upturned soil, the swamp or the partly drained pond or stream about which they were at work. Many patients treated themselves. The presence of malaria was recognized only when the infection had become disseminated and had attacked the inhabitants living near by.

Occasionally the accumulation of infection goes on so rapidly that veritable epidemics are the result. The disease appears in an explosive manner like typhoid fever or cholera. A good illustration of this type of outbreak occurred in Rhode Island in 1880.[51]

On Aug. 18 a workman in the yards of the Nayatt Brick Company was taken with chills and fever. Five days later sixty workmen were affected, some with very severe symptoms. On Aug. 25 the disease reached its climax, with seventy on the sick list. About Sept. 1 there was a general lessening. On Sept. 20 nearly fifty were again on the sick list. During the season one hundred and eighty-five persons, comprising almost the entire force, had been affected. Of the workmen attacked nearly all were Canadians. They slept in two lodges near the works. The two upper stories were occupied as sleeping rooms, the highest being twenty feet from the ground. Both floors were equally affected. The epidemic came very unexpectedly, for cases of malaria in this vicinity could not be recalled by the oldest inhabitant.*

Another epidemic of a different character as regards time and topography is the celebrated New Lenox case described by Dr. J. F. A. Adams.[39b]

In 1870 the dam of the Smith Paper Company on the Housatonic River was raised three feet above the already existing four feet. In the lower half of the district influenced by this dam, which caused a setback of four miles in a direct line, water spread out irregularly to an average width of a quarter of a mile. With the daily variations in the depth of the water portions of the muddy bottom were alternately covered with water and exposed to sun and air. During the very low water in the summer and fall of 1880, coves and detached pockets of water were formed.

In the summer of 1878 intermittent fever began to prevail in the vicinity of this reservoir. The first cases appeared close to the river on the east side at the foot of the mountains bordering the reservoir.

Of a population of eight hundred souls about three hundred and fifty-three were attacked up to Oct. 1, 1882. Up to 1880 cases had appeared in every one of the twenty houses on the east side of the river between the dam and the Pittsfield line. In some houses as many as six cases occurred. The surrounding towns were comparatively free from malaria during these years.

The celebrated lawsuit which followed failed to place the cause of the epidemic upon the company who raised the dam. Looking at the case from the present standpoint, we should say that some germ carriers, possibly foreigners, as workmen, wandering gipsies and the like, entered the territory around the reservoir, and the conditions being made very favorable by the drought, the mosquitoes became infected in large numbers. Last autumn I had the good fortune to inspect this interesting region both alone and in company with Dr. Adams. Anopheles larvæ were encountered in the ditches in the meadows, in isolated pools and in the river itself. Those which I reared into adults were all *A. punctipennis*.

I have no doubt that similar severe local epidemics have occurred, but they usually fail to find a faithful student and chronicler to put them on record.*

In endeavoring to trace the origin of such localized outbreaks the student of to-day is confronted with the task of searching past records concerning the movement of the population with special reference to the laboring classes. This task, which I have left untouched, would amply repay many a student in searching for subjects for a thesis, and it would utilize the experiments which human beings, quite unaware, have been and are still making upon themselves and upon one another, experiments which are of the highest value as they are inflicted upon us in the natural way.

In the position taken that laborers from malarial countries may introduce intermittent fever, I find myself no longer alone, for similar inferences have been made by European observers recently.

The mouths of the Elbe and the Weser rivers in Germany have been in times past the scene of much work in the construction of wharves, dikes and reclaiming of wet land. Malaria has usually accompanied this work. Martini[53] has recently published an account of several outbreaks which are of special interest to us. A number of Dutch laborers were imported in April, 1901, to work upon a large dike near Wilhelmshafen. Soon after their arrival some were affected with malaria (relapses?). From the scene of their work malaria spread and prevailed in 1901 and 1902.

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47. Theobald Smith: Notes on Anopheles, etc., in the Boston Suburbs. Journ. Boston Soc. Med. Sc., 1901, v, p. 321.
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49. R. Mayo-Smith: Emigration and Immigration, 1895, pp. 129–130, 133.
50. MM. F. et Ch. Sergent: Observations sur les Anopheles de la Banlieue de Paris. Annal. de l'Inst. Pasteur, 1902, xvi, p. 942
51. Report of the Board of Health of Rhode Island for 1880, p. 228.
52. E. H. Stevens: Malaria in Cambridge and Vicinity. Boston Med. and Surg. Journ., 1892, cxxvii, p. 614.
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(*To be concluded.*)

* Similar epidemics were noticed by Dr. E. H. Stevens[52] in the Cambridge brickyards among French Canadians in 1892 and previously.

* An epidemic in Deerfield in 1886–1888 is briefly described by Dr. S. W. Abbott in the report of the State Board of Health for 1888.

Original Articles.

PROBLEMS OF CLINICAL ANATOMY.[1]

BY THOMAS DWIGHT, M.D., LL.D., BOSTON,

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My attention was called very early in my career, by a murder case in which I figured as an expert, to the fact that all men are not made alike. This started me on my hobby of anatomical variations, concerning which I have had the honor of speaking before this society more than once. Years of observation have taught me that there is a practical clinical side to these studies. Just as the expert hesitates in estimating the height of a body from a single bone, because he is not aware how much the body in question may have varied from the norm, so the practitioner with his patient before him has often wondered whether some uncommon variation of structure might not be the cause of the impossibility of making the symptoms square with what, according to the books, should be the condition of affairs. There is a wide and but little explored area between the domains of anatomy and pathology; a debatable ground passing alternately under the sway of each of the claimants, which contains very valuable mines of information. It is not pure anatomy nor is it pathology. It treats of conditions which for the most part are not recognized during life, but the knowledge of which would have helped the practitioner in many a strait. This knowledge, I may add, is of special importance to the surgeon. The purpose of this paper is to point out certain groups of peculiarities which may be of clinical importance. They include not only variations of structures, but also changes which are the more or less constant results of disease. Increasing knowledge will, I am sure, show us that certain pathological conditions are almost necessarily associated with certain morphological changes. Moreover, the results of certain series of observations are, I think, establishing the law that certain pathological conditions have their origin in some peculiarity of development. Thus certain lesions from trauma occur only when there is an abnormal weakness due to peculiarity of structure. It is worth while to know that certain parts of the skeleton are particularly subject to errors of development, though we may be still ignorant of the cause. Why, for instance, is the last lumbar vertebra the only one in which the arch occasionally, especially in savage races, remains ununited with the body? Or, to take another and more practical instance, for it may affect the motions of the head and be accessible to the x-rays, why are the second and third cervical vertebræ especially likely to be more or less fused, and consequently underdeveloped? Why is the third metatarsal the only one that in the absence of any disease is fused with the tarsal bone supporting it, and why is this fusion limited to the plantar part of the joint? I shall follow none of these topics very far on this occasion, for that calls for minute details which would be out of place to-day. I have, indeed, already written on some of these points and have other papers in the course of preparation and publication. To-day I invite your attention merely to instances illustrating principles. I hope to show that they are of practical importance; nay more, that the deductions from some of them are far-reaching.

As a distinctly clinical point let me call attention to the symptomatology of aneurism of the right subclavian artery. The recurrent laryngeal nerve which winds round it is the chief motor nerve of the right half of the larynx. A certain more or less characteristic paralysis of the muscles of the right half of the larynx is the necessary consequence of an enlargement of the artery at the place where the nerve loops under it. Nevertheless there may be an aneurism at the very place at which it should give rise to this symptom without its appearing. Why? Because in a certain proportion of cases the right subclavian artery, owing to a deviation from the usual course of development, arises the last of the large branches of the arch of the aorta, and passes behind the esophagus to its destination. In these cases the inferior laryngeal nerve is not recurrent, but runs from the vagus in one or two bundles directly to the larynx, having no relation whatever to the subclavian artery. I expect to meet with this arrangement at least once a year, in the dissecting room. Here is a pretty instance of it.

Let us turn to peculiarities which are the direct results of pathological conditions. Look at these specimens of severe Pott's disease. Note how the aorta is as it were half coiled round the spine, lying in transverse folds with sharp angles. These specimens have been already described in print. The stoppage of the circulation by the compression of the vessel at these angles has been given as an explanation of the sudden death that occasionally occurs in this disease. It should be known that this is the most probable course of the aorta under these circumstances.

Here is another and a very different specimen concerning which there might be a good deal of discussion as to whether it is the result of a pathological change or of a congenital malformation. I may not discuss it because an article on it is about to appear in a medical periodical. Let me therefore merely show you this cast of a very remarkable hour-glass stomach which I had the good fortune to find in a hardened body. Plenty of hour-glass stomachs have been shown before now, but the true shape and relations can be learned only when the body has first been hardened. The appearance of this one is, so far as I know, unique. I leave you to judge whether or not such an observation is of clinical importance.

Orthopedic surgery is, perhaps, the most fruitful field of all for this line of research. Let us think for a moment on all the queer positions of the head. Nothing is more characteristic than its poise. I imagine any portrait painter would say that not only are there certain types of head

[1] Read before The Massachusetts Medical Society, June 10, 1903.

and face, but that each of these is associated with some peculiarity in the holding of the head. I do not say that structure determines function; for, beyond question, function modifies structure. Though some positions of the head imply structural peculiarities, certain long-continued postures must have their effect on the original structure. This question is full of difficulties; but what I want to insist upon is that a certain carriage of the head, when once it has become thoroughly habitual, predicates a certain anatomical condition which it imports the practitioner to understand. Which is the cause of the other, and how much one may react on the other, is not clear. Neither is it easy to say when we cross the dividing line between the peculiar and the pathological.

I have here several specimens which I again pass over lightly as I hope to discuss them more thoroughly hereafter. Look at this fusion of the atlas with the occiput. It is symmetrical; the whole of the atlas is developed, only the condyles and the skull are absolutely fused. Was this congenital or acquired? Evidently such a condition must give rise to a peculiarly stiff carriage of the head with, one would think, limitation of the motions. Here is another specimen in which one lateral half of the atlas is underdeveloped and fused with the skull while the other half stands out free. It is a modern skull, which came into my possession only a few years ago. Here is another which would be almost its exact counterpart were it not that the fusion is on the opposite side. It is from a mummy of the twelfth Egyptian dynasty, and at least four thousand years old. Many years ago I bought in Paris the separated bones of a head. Among them was this occipital, which bears on the left a stout process descending from the under side external to the condyle. I was at first at a loss to know what it was, but soon learned that it is known as the *paramastoid process*, which is found in many mammals, and is particularly large in ungulates and rodents. It is common enough in man as an insignificant projection, but this one was remarkable for its size and for being apparently fitted to articulate with the transverse process of the atlas. During the past winter I have found it again, and this time can show you the neck. The paramastoid process rests indeed against a corresponding surface of the transverse process of the atlas. The specimen is from a man of sixty-eight, and again it occurs on the left. Now this condition was evidently congenital. It is self-evident that it must have modified the movements of the head. That it involved a peculiar position is highly probable. Who would have suspected such a condition had the man come as a patient? Had the man been x-rayed would there not have been talk of an exostosis or of a tumor? I must beg leave to omit entirely what is perhaps my best case of peculiar conditions at the junction of the head and neck. I hope within a year to publish all these and others in detail and together.

We come now to some of the most practical considerations connected with this subject. X-ray work has brought a new factor into surgery. Its help can hardly be overestimated; but we must beware that it does not sometimes lead us astray. I do not refer here to the ordinary difficulties in the interpretation of the x-ray negative, of the necessity, for instance, of knowing which side of the object was nearest to the bulb and of allowing for the distance. These and other points are for the expert. I refer to the danger of the misinterpretation of peculiarities of structure. The specimen just shown is a case in point. It is remarkable how little is known of far more common variations. The late Professor Pfitzner wrote of his astonishment at finding that a distinguished surgeon was utterly unaware that the epiphysis which forms the end of the acromion may remain permanently separate from the rest of the bone. Not only would it suggest a fracture under the x-rays, but it might of course be detached by violence that would not break a normal bone. This naturally suggests the burning question of fracture of the scaphoid bone of the wrist, which I think no one had ever heard of before the x-ray. Now it occurs all the time. My friend Dr. Codman was kind enough a while ago to show me a room full of patients with fractured scaphoids at the Massachusetts General Hospital; and yet I still believe that, putting aside extraordinary cases of injury, a normal scaphoid is never broken, and that the separation into two parts, which undoubtedly occurs, is the result of violence acting on a bone composed of two pieces united merely by cartilage. This also I hope before long to establish.

The late lamented Professor Pfitzner of Strasbourg was the true pioneer in the scientific study of the bones of the wrist and ankle. He declined to be limited to the usually accepted number of bones and declared that there are many other true ones, some of which but rarely appear, while others are almost constant in the early cartilaginous stage. Some lose their identity by absolute degeneration, but more commonly this occurs by fusion with one of the neighboring cartilaginous centers. A case in point is what we commonly call the styloid process of the third metacarpal, which projects from the radial side of the base of that bone between the os magnum and the trapezoid in a way that makes the disarticulation of the third metacarpal particularly difficult. Now this styloid process is really a true carpal bone, the *styloid*, which usually, to be sure, joins the metacarpal, but which occasionally joins the os magnum or the trapezoid, thereby considerably modifying the articular lines, or which may indeed persist throughout life as a distinct bone. It is to be noted that such a bone which usually fuses with a certain recognized one, but which exceptionally may fuse with another, is also capable of fusing with both. This accounts for the tendency of particular bones to be fused. At the beginning of this paper I asked why the third metatarsal was particularly likely to be fused with the supporting tarsal bone, and why this always occurs on the plantar side. The answer is: owing to

the existence of a bone of this nature deep in the sole of the foot. Both Pfitzner and I myself have seen this several times in feet which present no sign of any pathological process. I have a specimen of it in a beautifully formed foot of a girl of nineteen.

Now it is evident that the persistence of such an occasional bone may give rise to x-ray negatives that are liable to misinterpretation. Many years ago, before the x-rays had been thought of, an excellent anatomist and surgeon thought that he had found in the dissecting room a fracture of the astragalus, because the external tubercle at the back of the astragalus was distinct. This is now known as the *os trigonum*, which may be found in all degrees of fusion, from complete distinctness to absolute incorporation with the astragalus. No one knows how many of these distinct centers of the wrist and ankle there may still be to discover. I had the luck a year or more ago to find a new bone in the ankle (the *os intercuneiforme*), and I think I have found a new one this winter in the wrist. To be sure, these discoveries at first may seem of no more value than that of one more asteroid or of a one-horse comet, which nevertheless are telegraphed all over the world; but I am sure that many of them have their very practical significance. Conversely the fusion of bones usually distinct is of practical importance. I have just mentioned one way in which it occurs, but it is not likely that it is the only one. Fusion of distinct bones is not only a disturbing circumstance to the operator who expects to sweep his knife gracefully between them, but it is of greater importance to the orthopedist who is studying the relations between structure and, let us say, flat foot. Thus the os calcis occasionally is connected by cartilage or fibro-cartilage with the outer end of the scaphoid. Though I believe the opposite opinion has been maintained, I think from my experience that it is associated with a high instep. What influence it may have on the movements of the foot is a more abstruse problem.

And so on, and so on:

> "Though I'm anything but clever,
> I could talk like this forever,"

and keep on showing you peculiarities which once were (perhaps still are) considered mere curiosities, but which in point of fact are alike of great scientific and of great practical importance. Let no one say that anatomy is exhausted. On the contrary, we are just entering on a new era, and on one which concerns especially the practitioner who would be eminent.

THE NEED OF A SUPPLEMENTARY LANTERN TEST FOR THE PROPER EXAMINATION OF COLOR PERCEPTION.[1]

BY CHARLES H. WILLIAMS, M.D., BOSTON, MASS.

THE test for color vision most commonly used at present is that proposed by Professor Holmgren. It consists of a collection of skeins of worsted of various colors, one hundred and twenty-five or more in number, well provided with different shades of red, green, blue, brown, gray and other colors. In addition to these there are two or three larger test-skeins, one of green, one of rose and one of bright red, the last being omitted in some of the test sets.

The principle on which this test is based is the fact that when a person who has a decided lack of perception for red or green looks at the solar spectrum, he sees in the green part of the spectrum a band of gray or neutral color, and this green test skein is carefully selected so as to correspond to that part of the green spectrum where the gray band is seen. To a person who is defective either for red or green, this green test-skein will appear of the same color as the light grays, or browns, and he will select as looking like it other grays, greens or browns, and will show by this mixing of confusion colors with the true colors that he is defective in his color perception, either for red or green, or both of these colors. The second test is made by placing a rose test-skein at one side of the pile of worsteds and having the person examined select such colors as look to him like this test-skein. If he is more defective for red, he will select with the rose or reds some of the blues or violets; but if he is more defective for green he will select with the rose some of the grays or greens. The green test-skein, which has generally been furnished with our American sets of worsteds, has been too light in shade, and on comparing it with the green test-skein in some sets of Holmgren worsteds imported from Upsala by the writer, and which were prepared by the person who made them under the direction of the late Professor Holmgren, it was found that the green test-skein of the Swedish sets was much darker and of a more decided green than ours, and was better adapted for use as a test-skein; and in some of the American sets of worsteds now made this defect has been corrected.

Some ten years ago the writer prepared fifty sets of Holmgren worsteds for use on the Burlington system of railways. In these sets all the skeins were numbered with small metal tags, the odd numbers being the true colors and the even numbers the confusion colors. By making a record of each examination as it proceeded, noting on proper blanks the numbers selected as looking like the test-skeins, a permanent record was kept of all examinations, which was sometimes of great use. Formerly the only record of the examination was the statement of the examiner who conducted the examination, as to whether the applicant's color vision was satisfactory or not.

A very extended use of the Holmgren test in the hands of many examiners is now showing that some cases are able to pass this test correctly and without hesitation, who when examined with the lights from a distant signal, may be unable to distinguish the red or green with any reasonable degree of certainty, and, in fact,

[1] Read at the Medical Meeting of the Boston Medical Library, April 6, 1903.

often confuse these colors. This occurs most frequently in cases of acquired defect in color-vision caused by excessive use of tobacco or alcohol, or by a combination of the two. In such cases there is often a small defect in the central part of the retina, so small that the retinal image of the skein of worsted is large enough to be formed partly within the affected area and partly beyond it, and if at any part it falls on healthy retina its color can be at once recognized. If the object is small, like a distant signal light, the retinal image is formed wholly within the affected area, and the color is not recognized. At night there is often no other means of distinguishing between safety and danger except by the quick and accurate recognition of the color of a railway signal or the side light of a ship, and it is of special importance that the test for color perception should include a test resembling as nearly as possible the conditions of service, and of such a kind as to show conclusively, after the test has been made, whether the person can be relied on to recognize quickly and accurately the color of a distant signal light. For some years the Dutch railways have required a test with the Donders lantern, in addition to the worsted test, but my experience with this lantern showed that it was not well adapted to tests made by railway officials, as is often done in this country.

In 1892 the writer devised a wheel with sixteen colored glasses, which could be brought in succession before a light by revolving the wheel; there was also a diaphragm to vary the size of the colored area, and this test is still used as a reference test on the Burlington road. In 1899 a smaller and more portable lantern was arranged for use on the N. Y., N. H. & H. R. R., when they revised the methods of examining their men



This lantern showed only one light at a time, and was soon replaced by another in which either one or two lights could be shown at a time, and where the colors of the glasses in the lower disc could be modified by combinations with the glasses of the upper disc, and where the area of the colors could be varied.



This lantern is now in use on the N.Y., N. H. & H. R. R., the Great Northern, the Boston & Maine, the Canada Atlantic and some other roads. It has been found in practice that the



MODEL OF 1903.

upper disc of these lanterns is seldom used, and it brings in a complication which is not desirable. It is very necessary that these tests should be made as simple as possible, so that a person of good intelligence can be easily instructed to make them in such a way as to give reliable results, especially when they have printed instructions and forms to guide them. For this reason a new lantern was constructed this year having on its face a single disc with eighteen colored glasses, and within the lantern two lights and a shutter, so arranged that either two or one of the colored glasses can be illuminated at one time. By revolving the disc all the colors can be brought before the lights in succession, and it is found that with two lights showing at one time, a person with defective color-perception is often more confused than when he has only one colored light to look at; for instance, with a light and a dark red he will often call one of them a green and the other a red. The shutter, beside regulating the lights as single or double, also changes the area, so that two lights with the full opening, half size, or the smallest opening can be shown, or one light of each of these sizes. Under each colored glass in the disc is an opening with a transparent number, which is lighted at the same time as the color above it. This number can be seen by the examiner, but is screened from the person examined, and by means of these numbers a record of the examination can be kept, the number under the color and the name given to this color being noted as the examination proceeds. The lantern is placed in a dark room twenty feet from the person to be examined, and on a level with his head. The area of the largest opening at this distance then corresponds to the apparent size of a standard switch light at a distance of 160 feet, and the smallest opening to such a light at a distance of 1,300 feet.

This form of lantern is already in use on the Canadian Pacific Railway and the Northern Pacific Railway, and is to be preferred, on account of its greater simplicity, to the previous models.[1] In addition to the test with different colored lights, it is important to make the test with a light whose intensity can be varied by fixed amounts; for in some cases those who are defective depend on the intensity of the light to distinguish between red and green. For this purpose the writer made an electric lamp with a specially constructed rheostat in the base, through which the current for the two incandescent lamps can be passed.



[1] Since this paper was written, twenty of these lanterns have been ordered for use on the different divisions of the Southern Pacific Co.

By means of a handle projecting through the door at the back of the lantern the resistance introduced by the rheostat into the current for the lamps can be varied from nothing to 150 ohms, and the candle power of the lamps can thus be reduced or raised by fixed amounts at pleasure. Oil lamps are used in case an electric current cannot be obtained, but the latter is preferred. This lantern test is now used on the above roads *in addition to* the Holmgren worsted test. If a person calls red green, or green red, in the lantern test, or selects confusion colors with both the green and the rose test-skeins, he is rejected as showing an unsafe degree of defective color-perception.

With these two tests carefully made it is reasonably certain that no dangerous case of defective color-sense will be passed; but with either test alone it is possible to have men pass the test who are so defective that they may be dangerous in positions where it is necessary to distinguish quickly and accurately between red and green. In cases where the trouble is due to an acquired defect, as from the excessive use of tobacco, a considerable improvement may result from stopping the tobacco; but in the congenital cases no treatment will be of much use. Some men can learn by constant practice to give the correct names to certain colors or even to select correctly the proper colors in a given set of worsteds, but when tested with new colors that they have not previously seen and practiced with, they will generally be unable to recognize them correctly.

EFFORTS TO ABATE THE MOSQUITO NUISANCE IN BROOKLINE.

BY H. LINCOLN CHASE, M.D., BROOKLINE, MASS.

THE great prevalence of mosquitoes every spring, summer and fall in certain sections of Brookline, the increasing number of citizens in every part of the town, the comparatively recent discovery that intermittent fever is transmitted from a patient to well persons through the bite of a mosquito,— these facts induced the Board of Health in August, 1901, to consider the feasibility of suppressing the mosquito nuisance.

The Board of Health voted to refer the matter to its agent, the writer, for an investigation and report, with recommendations. The report was duly made, and summarized most of the information then available on the subject, much of which was secured from Dr. Theobald Smith's valuable and interesting paper on the subject given before the Massachusetts Association of Boards of Health at its meeting in July, 1901; partly from Dr. L. O. Howard's book entitled "Mosquitoes" and much also from the experience of our medical officers in Cuba in suppressing the mosquitoes that transmit malaria and yellow fever. The Board promptly authorized its agent

to proceed along the lines recommended in his report.

We prepared a list, with the help of our Police Department, of nearly all the stagnant water in the town. We next marked the exact location of all these places on the town map, and had them systematically inspected and reported on by Mr. Nyhen, the Board of Health laboratory assistant, as to the presence or absence of mosquito larvæ, and of their natural enemies, frogs and fish.

An examination was also made of a number of our street catch-basins; and, with the exception of those few that received large quantities of cold water from neighboring standpipes, all were found to be teeming with mosquito larvæ, all of which were those of culex. Our largest body of water, Leverett Pond, was found at that time to be entirely free from larvæ, minnows and other fish being quite plentiful. Other ponds that had either no larvæ visible, or only very small ones, were found to be well supplied with frogs. Most of the ponds, pools and ditches, however, were found to be breeding places of mosquitoes, all furnishing larvæ of culex in abundance; and quite a number, notably those off upper Boylston Street, near Chestnut Hill, where malaria has been more or less prevalent for some years, had numerous larvæ of anopheles.

We secured a barrel of light fuel oil, and in September Mr. Nyhen, with the help of a laborer and a horse and wagon, treated a single time all of the breeding places of anopheles and all the more important breeding places of culex in the more thickly settled sections of the town, including two hundred and fifty catch-basins. Every pond surface was measured more or less accurately. Light fuel oil was then applied, and the surface of the water well agitated with a pole to hasten the diffusion of the oil. As an experiment we also put quicklime into a few shallow pools, but were rather disappointed in the results. Later we filled in all shallow pools. The oil treatment we found very successful as a temporary measure, especially in the catch-basins, all of which, almost three weeks after treatment, remained wholly free from larvæ.

At the same time that we began to treat the larger breeding places of mosquitoes, we distributed by the police to each family in town the following circular of information:

OFFICE OF THE BOARD OF HEALTH,
BROOKLINE, MASS., Sept. 9, 1901.

MOSQUITOES.

Both malarial and common mosquitoes are numerous in Brookline, and the Board of Health invites the co-operation of citizens in its efforts to diminish their numbers and to reduce the areas in which they breed.

Mosquitoes always lay their eggs in water, as the young (larvæ) cannot live elsewhere. They rarely fly far, and their presence is usually accounted for by the existence of standing water close at hand. The eggs and larvæ abound throughout the season in ponds, pools, puddles, cisterns, rain barrels, water buckets, old tin cans, clogged gutters, and, in fact, everywhere where even a very little water is allowed to stand for a few days.

Experience in other places has shown that much good can be accomplished by giving attention to all the standing water in any neighborhood. In permanent ponds, fish and frogs, if in sufficient numbers, will destroy the eggs and larvæ, but care is needed to see that small pools around the edges are filled up or treated with oil. Unnecessary pools and puddles of all kinds should be drained or filled up. A little kerosene oil (preferably "light fuel oil") put into standing water spreads easily and rapidly over the surface, and, without injuring the water for other purposes, destroys the larvæ, and prevents the laying of eggs. An ounce of oil is sufficient for fifteen square feet of surface; and an application of it is effective for about two weeks, at the end of which time it should be renewed. Good results have also been obtained by putting unslaked lime into standing water.

The mosquitoes which live through the winter in cellars and barns, under bridges, and in other sheltered places, lay eggs again in the following spring; and it is believed that active measures taken now will materially reduce the numbers to survive the winter. The board intends to treat some of the worst places in town with oil at once, and to remove certain stagnant water entirely, and also to follow the matter up closely early next year. Citizens are urged to look after all standing water on their own premises.

OUTFIT OF 1891.

Mr. Nyhen was given the personal supervision of the work in the field, under the direction of the agent of the board. He was allowed one laborer at $1.75 per day to assist him. Our equipment consisted of: One hired horse and light wagon; 1 outfit for collecting specimens of larvæ, pupæ and adult mosquitoes; 1 five-gallon oil can; 1 single gallon watering-pot; 1 brass spigot; 2 galvanized iron oil dripping pans; 1 pick; 1 funnel; 50 gallons light fuel oil.

Beginning the work in September, we hoped to destroy the last mosquito larvæ of the season, the ones that otherwise would have matured and lived through the winter, to produce the first brood of mosquitoes of the following spring. So much for the season of 1901.

Early in 1902 the board allowed four hundred dollars for mosquito work, and those in charge prepared to make an early start. For various reasons, however, work could not be begun until early in May; while the mosquitoes appeared in considerable force late in April.

A second circular of information, more particularly in regard to the cause and prevention of malarial fever, was prepared, and distributed by the police to every family in town. In response to the request to the citizens to report all probable breeding places known to them, numbers of notifications were received,

Mr. Nyhen was placed in immediate charge of the work as previously, and most of the season he had at his disposal two laborers at $1.75 each per day, and a horse and wagon. The equipment consisted of most of that of 1901, and in addition we had the following list of articles: Four five-gallon oil cans; 1 ten-gallon oil can; 2 picks; 2 hoes; 2 rakes; 2 shovels; 2 scythes; 2 Breck hand-force pumps; 3 one-gallon watering-pots; 16 feet of hose in three sections; 3 galvanized iron pails; 2 pairs of deep water leather boots, for use by men handling oil; 3 pairs of deep water rubber boots; 1 zinc wagon pan; 500 gallons of light fuel oil.

This outfit proved to be somewhat inadequate, but the tools and utensils used were as suitable

as could be found. More satisfactory tools might be devised. We badly needed two or three more laborers.

METHODS OF WORK.

(1) All pools, ponds, ditches and other breeding places, including catch-basins, were located upon the town map. We also located and treated a number of breeding places just beyond the town's borders.

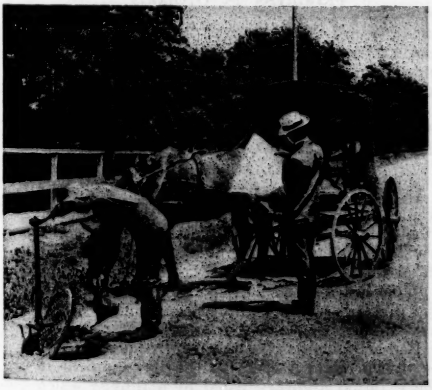
(2) The approximate areas were determined, and the number of catch-basins ascertained.

(3) Breeding places of culex and anopheles, respectively, were determined, and also the places where both species were breeding. This we did in order to learn the proper intervals for treatment; that is, whether every three weeks or every four weeks.

(4) The location on the town map of the public dumps or other places where accidental receptacles of water were to be found ; for example, tin cans and boxes.

(5) Details of treatment, temporary or permanent. Petrolizing, and necessary work preliminary to it. Last, but most important of all, filling or draining.

Treatment of catch-basins. — Three ounces of light fuel oil we found to be the necessary quantity for each treatment of one of our street catch-basins. This will keep the catch-basin free from larvæ, and prevent mosquitoes from laying their eggs, for a period of about three weeks.



TREATMENT OF A CATCH-BASIN.

The treatment of ponds and ditches. — The amount of oil used for a given pool or pond we determined as follows: Calculate the amount necessary from Dr. Howard's rule, 1 oz. of light fuel oil to fifteen square feet. If the pond had vegetation growing luxuriantly in it, irregular shores, and a large amount of vegetation about it, we added an excess of one fourth of the original amount. If the pool presented a clear water surface, we added one sixth more than the usual amount. Pools well stocked with fish did not require a film of oil over the entire surface; but



"PETROLIZING" AND "PUDDLING."

a belt about fifteen feet in width, extending around the shores, was thoroughly treated.

If a pool or pond had fish or frogs in it, we examined it very carefully until we were satisfied that it was not a mosquito breeding pool; for we found a number of ponds well stocked with fish and frogs that were, nevertheless, breeding places of culex and anopheles. We found that the film of light fuel oil did not kill either fish or frogs.

In treating ditches the amount of oil was calculated and distributed as evenly as possible; and, if necessary, the water was well agitated.

After the oil had been evenly spread upon the pond from the most favorable working points, a man styled the "puddler" violently agitated the



"PUDDLING."

water with a hoe. These photographs, kindly taken for us by Dr. Walter G. Chase, show very faithfully some breeding places of mosquitoes and our methods of treatment.

The treatment of pools, ponds and ditches where rank vegetation was abundant was begun by removing this vegetation with scythes as completely as possible for the distance of about fifteen feet from the edge of the pool to be treated. The shallow pools, if not large in area, we filled in. If a pool stood near a dump, we gathered into it accidental receptacles and covered them with sufficient soil. We drained or filled in a great many small pools.

Accidental receptacles. — We found on our public and private dumping places a great many small receptacles of water which proved to be important breeding places of mosquitoes, especially for anopheles. We gathered all metal receptacles that would hold water, and either used

them in filling up pools or buried them. Bottles and wooden receptacles we simply broke up.

Of course petrolizing is but a temporary expedient; only draining or filling in can result in a permanent removal of a mosquito breeding place. To this end the board directed Mr. Alexis H. French, the town engineer, to examine and report upon, with reference to their drainage, several sections of swamp land, and to furnish an estimate of the probable cost of the drainage. In this connection the following letter from Dr. Abbott, secretary of the State Board of Health, is of interest:

BOSTON, May 22, 1902.

DR. H. L. CHASE,
Agent Board of Health, Brookline:

Dear Doctor: — In reply to your further inquiry, on behalf of your board, there can be no doubt that wet lands and stagnant bodies of water constitute a serious nuisance, especially in thickly settled towns, since, when the question is considered both subjectively and objectively, the presence of human beings is essential to the existence of a nuisance. Wet lands in uninhabitated districts are of course not dangerous, because there are no human beings to whom they may prove harmful; but in large towns the case is necessarily otherwise.

The statutes (Revised Laws, Chap. 75, §75) already provide that "land which is wet, rotten, or spongy or covered with stagnant water, so that it is offensive to residents in its vicinity or injurious to health, shall be deemed a nuisance"; and the recent discoveries relating to the dangerous nature of insects bred in such places only strengthen the statement expressed in the statutes.

Yours respectfully,
SAMUEL W. ABBOTT,
Secretary.

The final treatment for the season of all the catch-basins and other breeding places was given during the month of September.

RESULTS.

Our work had not been going on more than a month when many citizens noted and favorably commented on the marked diminution in the number of mosquitoes in the formerly infested districts, especially the Longwood district. The work went steadily on; and the results were such that the Board of Health increased the mosquito working force from one laborer to two, and provided a little more money. So great an improvement was noticed in every district that letters of commendation from many representative citizens were received, some of them from physicans.

The most important object of this work — namely, the prevention of malarial fever — should not be overlooked. In December, 1897, the agent of the board wrote to most of the practising physicians of the town, requesting each to report to him, as a favor, the number and location of his malarial fever cases, of tertian type only, seen by him during the previous season. The total number of typical cases reported was not less than fifty. Since May, 1902, the Board of Health has required the reporting of every new case of malarial fever, and received notice last year of only twelve cases.

The writer regrets that the latter part of the past season was unusually cool, thus making a test of the work less severe than during the earlier part of the season.

The total cost of this work, up to the middle of September, in addition to the loss of time involved in its supervision, was $625.57.

In our work we had assistance from our bacteriologist, Dr. Francis P. Denny, our town engineer, our superintendent of streets, our park commissioners and some other town officers.

For the work of the present mosquito season (1903) the sum of one thousand dollars has been appropriated, but the work will not be conducted in all respects as it was last year. By direction of the Board of Health, the owners of mosquito breeding lands have been sent letters informing them as to what should be done in order to abate the nuisance, and inquiring whether they are able and willing to undertake the work. The Street Department and the Park Department have received orders to attend to all street catch-basins, public dumping places, pools and ditches on the town lands throughout the season.

The board will decide later what it will do where land owners, for any reason, do not prevent mosquito breeding on their premises; it is possible that it may return to the policy which last season proved very satisfactory in its practical results.

Medical Progress.

PROGRESS IN OTOLOGY.

BY PHILIP HAMMOND, M.D., BOSTON.

ARLT [1] reports good results in cases of malformation of the auricle by the subcutaneous injection of small quantities of paraffin.

Where the auricles are unduly prominent, Pooly [2] advises operation, using cocaine anesthesia.

EXTERNAL AUDITORY CANAL.

In otitis externa, Randolph [3] obtains the best results by filling the canal with a strong solution of nitrate of silver (gr. 30 to the ounce). This usually stops the intolerable itching of which the patients complain.

Wheelock [4] reports a discharge of blood through the intact external auditory canal in a case of hystero-epilepsy.

Red cerumen has been shown by Pacinotti [5] to be due in certain cases to the development in the external auditory canal of a fungus which he identifies as Oospora constacea, or Monilia miniata.

BACTERIOLOGY.

Phillips [6] states that a search of the literature of the subject reveals the fact that some twenty odd distinct kinds of bacteria have been observed in the discharge from purulent ears.

[1] Monatschr. f. Ohrenh., September, 1901.
[2] N. Y. Med. Journ., July 13, 1902.
[3] Progress. Med., March, 1903.
[4] Amer. Med., Aug. 3, 1901.
[5] La Semaine Médicale, Nov. 13, 1901.
[6] Trans. Am. Laryng., Rhin. and Otolog. Soc., 1902.

Bacteriologic examination of the discharge is now considered to be a most important aid in diagnosis and also prognosis, but it is important that the culture be taken as early in the case as possible. Unless we examine immediately after opening the membrana tympani, we cannot be sure that the organism did not enter the ear from without. There is no specific germ of otitis media, nor is the disease invariably mono-microbic.

Funk [7] is responsible for the statement that the organisms found in the frequency of their occurrence are pneumococci, streptococci, staphylococci, Friedlander's bacillus and diphtheria. He also points out that it is almost impossible to demonstrate the presence of the tubercle bacillus in the discharge from the ear, and recommends that bits of tissue removed by the curette be examined for organisms.

Albesheim,[8] in a study of otitis media occurring during measles, found streptococcus once in pure culture; once the staphylococcus albus. In two other cases each of these bacteria was seen in conjunction with a bacillus which could not be identified.

Grimmer [9] has succeeded in inoculating guinea pigs with tuberculosis from material obtained from the granulations of suppurative ears. He considers that intra-peritoneal injections in this manner are a most conclusive proof of the presence or absence of tuberculosis. He also states that the presence of cholesteatomatous material is positively opposed to tubercles being present.

Trow [10] claims that tuberculosis of the ear may be acute or chronic. In the acute stages there is general diffuse cellular infiltration of the mucous membrane and proliferation of the cellular elements; there are few, if any, giant cells, but a large number of tubercle bacilli. The mucous membrane breaks down rapidly, with resulting great loss of substance. In the chronic form bacilli are not abundant, the mucous membrane has a tendency to granulate, and under favorable circumstances connective tissue may form, with healing as an ultimate result. It occurs much more frequently as a secondary infection than as primary, and generally takes place through the Eustachian tube. It is often insidious, sometimes occurring without rupture of the drum membrane, and without pain. As regards treatment other than general, it is of the utmost importance to keep the ear as dry and free from discharge as possible.

Goldstein [6] firmly believes in the existence of primary tubercular infection of the ear, and quotes an exhaustive bibliography to substantiate his opinion that it is not only possible, but extremely likely, that it is more frequent than a first consideration of the subject would indicate. Four cases are reported in support of the author's views, in which positive microscopic evidence was obtained.

[7] Pyogenic Diseases of the Brain and Spinal Cord.
[8] Arch. f. Ohrenh., Bd. liii, S. 87-99.
[9] Arch. of Otol., June, 1902.
[10] Canada Lancet, January, 1902.

HEARING TESTS.

Andrews [11] calls attention to the possible sources of error in testing the hearing. They may arise from poorly adapted or imperfectly understood instruments, or the fault may lie with the examiner, or from the failure of the patient to promptly and accurately respond to the various tests. Although there are many tuning forks on the market, there are few or none absolutely free from defects. The advantage possessed by the weighted forks, rendering them free from overtones, becomes positively detrimental when they are applied to the bone, because of the jarring sensation transmitted through the handle. A very important objection to the use of the ordinary fork is the length of time during which its vibration may be heard. In making repeated tests for the sake of accuracy, not only is much unnecessary time wasted where the fork vibrates more than a minute, but the patient easily becomes tired, and does not respond readily to the tests. Many of the published records of hearings are absolutely valueless, because of the neglect to specify the length of time during which the normal ear could hear the fork in question.

Attention is called to the intimate relation existing between a diseased nose and audition by Crouch,[12] who reports two cases of unilateral deafness accompanied by suppurating maxillary antrum, which resisted all ordinary methods of treatment, but were permanently cured by relieving the sinus trouble.

MEMBRANA TYMPANI.

According to Lucae,[13] the artificial drum does not act by increasing labyrinthine pressure, for in this case to obtain the desired effect it should always be placed against one of the two windows, whereas he has always been able to secure good results by placing it against the upper portion of the promontory.

Gomperz[14] does not believe in the value of the artificial drum unless there is destruction of more than one quarter of the membrane. He has, however, observed patients who complained of buzzing in the ear and of a feeling of heaviness in the head improve markedly by the application of the artificial support. He has been in the habit of employing for this purpose a drum made of pure silver molded into the proper shape.

In the case of large perforations Bentzen[15] has used a tampon made of cotton, shaped like a ball. This he presses up against the round window, obtaining the best results from this location.

To close old perforations of the drum, Gomperz [14] applies trichloracetic acid on a cotton stick to the edges. This method is somewhat

[11] Laryngoscope, April, 1902.
[12] Journ. of Eye, Ear, Nose and Throat Dis., January–February, 1902.
[13] Archiv f. Ohrenh., Bd. liv, H. 3 u. 4.
[14] Ann. des Malad. de l'Oreille, du Larynx, etc., October, 1902.
[15] Monatsch. f. Ohrenh., January, 1902.

painful, but seems free from danger. He considers that the treatment is indicated in all kinds of perforations.

Randolph [3] strongly urges the importance of an early incision of the drum membrane in cases of acute inflammation, as does also Meierhof.[16] The latter regards it a safe rule to puncture when in doubt, especially in the acute exanthemata. Delay means breaking down of the tissue, perforation and a more or less lengthy siege of otorrhea.

Körner [17] presents a table of statistics regarding paracentesis of the drum membrane, which shows conclusively that the earlier the incision is made in the drum the earlier the recovery. There seems to be no doubt that the best safeguard against mastoiditis is a prompt opening of the drum.

Frost [18] mentions a case in which erysipelas spread from the throat through the Eustachian tube and middle ear to the face.

FACIAL PARALYSIS.

Harvey Cushing [19] has succeeded in re-establishing the function of the facial nerve after it had been completely severed by a bullet wound in the mastoid region. Six weeks after the injury, and after the mastoid wound had completely healed, Cushing severed the spinal accessory and united it with the facial. Six months later the patient had very fair control of the facial muscles, with the characteristic droop of the shoulder seen in cases of an injury to the accessory nerve.

This opens a most promising field of surgery for the relief of some of our most disfiguring cases, and one of which we will undoubtedly hear more within the next year or two. Already Ballance and Stewart[20] have reported cases in which practically the same operation was done, the patient being subsequently treated by electricity. The results have been most encouraging.

Reik [21] has considered the etiology of paralysis of the facial, which, although not dangerous, is a most disagreeable symptom, and has long been recognized as a complication of ear diseases. It may, however, occur with so slight a disturbance in the ear that the latter is scarcely perceptible. Such an instance is reported by Reik, who sums up the points in his paper as follows:

(1) If exposure to cold in one way or another is the cause of most cases of facial paralysis, it probably acts most commonly through the production of an otitis media, whereby the nerve becomes involved either in a direct extension of the inflammatory process to its exposed sheath, or through pressure upon it of an exudate.

(2) This being admitted, the form of treatment which offers the most rapid and satisfactory results is a paracentesis of the tympanic membrane to free the cavity of its abnormal contents.

(3) We should never, in any case of facial paralysis, neglect to examine the ear.

[16] Arch. of Otol., vol. xxxi, No. 2.
[17] Arch. f. Ohrenh., Bd. lvi, H. 2.
[18] Amer. Med., April 26, 1902.
[19] Annals of Surgery, May, 1903.
[20] Brit. Med. Journ., May 2, 1903.
[21] Bull. of the Johns Hopkins Hosp., April, 1902.

SUPPURATIVE INFLAMMATIONS OF THE MIDDLE EAR.

In a consideration of the cause of purulent inflammations of the middle ear, Kuhnlein [22] found that in the summer months, when nasopharyngeal troubles were less prevalent, there were fewer cases of ear involvement.

Urbantschitsch [23] reports two cases where there was a small amount of muco-purulent discharge from the ear at regular intervals, which seemed to entirely recover as a result of inhalations of nitrite of amyl. He thinks the condition was evidently a tropho-neurosis.

Muller [13] reports ten cases of chronic suppuration with various neuroses, such as epilepsy, chorea, etc., in which there was marked improvement of the nervous condition following a radical operation and cure of the otorrhea. The dura was freely exposed in all the operations, and Muller ascribes the amelioration of the symptoms to changes in the blood supply of this protective membrane.

The question of the influence of syphilis as a cause of inflammations of the ear is discussed by Parmentier,[24] who records the case of a woman who had an otorrhea of six months' duration, and on examination was found to have a large polyp springing from a perforation located at the superior and posterior portion of the tympanic membrane. In addition to this there were clinical manifestations of secondary syphilis. The patient refused to have the polyp removed, and was placed upon anti-syphilitic treatment. At the end of two months, during which this treatment was continued, the discharge had entirely stopped, the polyp had disappeared, and in its place was found a beautiful cicatrix of the drum membrane. Parmentier regards the aural trouble as distinctly one of syphilitic origin.

Grunert [25] cites two cases of otitis in which examinations of the urine previously made showed no sugar to be present, while during the height of the disease large amounts of sugar were excreted in spite of the fact that all carbohydrates were withdrawn from the food. Both were cases of chronic suppuration. One was complicated by a diffuse purulent meningitis, as was proven by lumbar puncture. In the other there was an extradural abscess. Operative measures were employed in both cases, and after recovery the urine was found free from sugar, although a mixed diet was given. One of the cases was under observation for nearly five months, and during that time the urine was always free from sugar.

[22] Monatschr. f. Ohrenh., November, 1901.
[23] Rev. heb. Laryngol., d'Otol., etc., July 12, 1902.
[24] Progrès méd. Belge, Feb. 15, 1902.
[25] Arch. f. Ohrenh., Bd. lv, H. 3 u. 4.

Richards [6] points out that one of the chief reasons for the existence of cases of chronic suppuration is the fact that many general practitioners do not yet appreciate the dangers which arise from the presence of pus in the ear. He advocates operation in cases which do not improve within a reasonable length of time, and emphasizes the danger of the formation of brain abscess. The possible influence of the operative measures upon the hearing power should not be reckoned a factor in these cases; the danger to the life of the individual is more to be considered than any possible loss of hearing as a result of operative interference.

That this danger is a well-recognized one was noted by the writer [26] in an article showing the importance of certain diseases of the ear with reference to life insurance.

Dench [6] finds that intra-tympanic caries is the underlying cause of nearly all cases of chronic discharge, and believes that we must treat the cases surgically just as we would handle a similar condition with dead bone in any other portion of the body. There are two methods of procedure open to the operator: First, the removal of all dead bone through the external auditory canal; second, where the disease is extensive, we can accomplish our purpose only by removing the bony walls enclosing the ear cavity. In the early stages intra-tympanic caries is confined to the ossicles, and their removal is sufficient to constitute a cure. Superficial caries of the tympanum, even, may be removed in this way. The operation is an ideal one, and confines the patient to the house for only a few days. It is absolutely essential that the incus be removed.

Pearce [6] has tried removal of the ossicles in some cases under a local anesthetic, but has lately always resorted to ether. In cases of granulation tissue, bleeding may interfere with the different steps of the operation to such an extent that the patient's endurance may be exhausted, and it may become impossible to complete the operation.

Packard [6] observed a case of necrosis of the temporal bone following scarlet fever in a boy of four and a half years. The discharge had existed for a few weeks only, and when seen, there was a large sequestrum filling the left auditory meatus.

Fougeray [27] has for the past eight years been using medicated gauze for tamponing the canal in cases of otitis media suppurativa. Originally he experimented with iodoform gauze, but of recent years he has been obtaining his best results from the use of naphtholated crinoline gauze. His technique consists in cleaning out the canal, filling it with hydrogen peroxide, and without allowing this to run out, to tampon the canal with gauze.

Bezold [28] is absolutely opposed to the tamponing of the canal with gauze under any circumstances in cases of suppuration. He has been accustomed to filling the meatus with boracic acid powder, but this method seems to be open to the objection that the powder readily forms hard masses, blocking the drainage.

Gautier [29] has experimented with methylene blue as an antiseptic in the treatment of chronic otorrhea, particularly where there was much odor. His method was to first wash out the external auditory canal, and then instill fifteen or twenty drops of a lukewarm solution of 1:500 methylene blue. This was allowed to remain in the ear for five minutes. A serious objection to its use, however, was the difficulty of avoiding the staining of the face and parts adjacent to the ear.

Snydacker [30] has reported the results obtained from a microscopic examination of the discharge in chronic suppuration. He considers the presence of shreds of epidermis or of bone dust to be of more value as a diagnostic point than a bacteriological finding.

To facilitate the removal of large polypi, Bellevue [31] is accustomed to inject into the substance of the growth 1 cc. of a 5% solution of cocaine. This spreads throughout the tumor, including its attachment, and apparently gives rise to no trouble from absorption, as most of the solution is removed with the polyp.

As the result of histological examinations, Bruhl [32] found that out of 60 aural polypi 47 were polypoid granulations, 8 were fibromas and 5 myxo-fibromas.

(To be concluded.)

[26] Bost. Med. and Surg. Journ., May 15, 1902.
[27] Rev. heb. de Laryngol., d'Otol., etc., 1902, No. 36.
[28] Zeitschr. f. Ohrenh., Bd. xli, H. 3.
[29] Echo med. du Nord, No. 41.
[30] Arch. of Otol., vol. xxx, No. 4.
[31] Rev. heb. de Laryng., d'Otol., etc., Dec. 20, 1902.
[32] Arch. of Otol., August–October, 1901.

Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

TWENTY-FIFTH ANNUAL MEETING, WASHINGTON, D. C., MAY 12, 13 AND 14, 1903

FIRST DAY. — TUESDAY, MAY 12.

SOME CASES OF CANCER TREATED BY THE X-RAY.

DR. ARTHUR H. BLISS of Philadelphia read the above paper, being a report of two cases and comments on the method of treatment.

One case involved the ethmoid and sphenoid regions, both orbits and eyelids. Syphilis was excluded from the history, and a pathological examination showed the growth to be carcinoma. One operation had been done, clearing out the ethmoid and frontal region on the right side and taking out the right eye. The x-rays were used late in the case, with treatments three times a week for about five minutes at a sitting. The other case gave a history of syphilis twenty years previous; the growth was in the tongue, and the lymph nodes of the neck were enlarged and the floor of the mouth in-

filtrated. Potassium iodide had no effect on the growth, and although no pathological examination had been made, the clinical aspect of the case was one of carcinoma. The x-rays were used as in the previous case. There was some slight improvement at first, with less rapid growth at the periphery of the mass, and a moderate degree of relief from pain; but no effect upon the mass of the tumor.

The author's conclusions were that no permanent improvement or cure was to be expected in these cases, although the x-ray was undoubtedly valuable in the treatment of purely superficial lesions, such as lupus; and that in such cases of deep involvement, early radical operation was indicated, and that valuable time should not be lost in the use of the x-ray.

DR. DELEVAN of New York, in discussing the paper, said that he agreed with the negative conclusions of the author; and reaffirmed his own conclusions, as stated in his own paper of a year ago, that no authentic case was yet on record of any permanent good results from x-ray treatment in deep-seated growths. He said he thought it might possibly do some good if used very early; but if no good resulted promptly it should not be continued so long as to allow the growth to get beyond legitimate radical operation.

DR. GLEITSMANN of New York, DR. SWAIN of New Haven, DR. COOLIDGE of Boston, DR. BIRKETT of Montreal and DR. SIMPSON of New York, all confirmed from their own experience the negative results from the use of x-rays in cases of deep-seated growths.

SOME FURTHER INVESTIGATIONS OF THE CHEMICAL PATHOLOGY OF THE SALIVA.

DR. D. BRADEN KYLE of Philadelphia read this paper. He detailed many laboratory and clinical experiments and observations of the changes in the character of the saliva, under different conditions of diet, hygiene, climate and medication, and spoke particularly of the frequent evolution of irritating substances, often gases, and their influence upon conditions of hay fever, either as causative or aggravating factors. He claimed that some cases of hay fever were directly caused by this irritating condition of the saliva, and could be properly treated only by changing the character of that secretion.

ADENOID VEGETATIONS, WITH SPECIAL REFERENCE TO ADULT CONDITIONS.

DR. JAMES E. LOGAN of Kansas City called attention to the importance, in all acute infectious diseases, of a careful examination of the naso-pharynx, and the thorough antiseptic cleansing thereof. He thought that neglect of adenoids in the adult was responsible for the frequent failure in the treatment of obstinate cases of affections of the middle ear and upper air passages. The author, though finding little reference in literature to adenoids in the adult, a fact suggesting either rarity or small importance of the condition, said that in his experience this was not so, and as illustrating the importance of the condition, mentioned a case of complete deafness, excepting by bony conduction, in which the naso-pharynx was full of adenoids and both nostrils obstructed by hypertrophied turbinates, in which full hearing was recovered after the nose and naso-pharynx were cleared out.

As to the presence of adenoids in the adult, he quoted Raulin of Marseilles, and agreed with his conclusions, that when present they usually dated from childhood, not being developed after puberty when absent previously; and that when present they usually caused deafness, or chronic nasal or naso-pharyngeal catarrh. He also claimed that adenoids, when once pathologically enlarged, do not tend ever to atrophy, especially if during their existence any acute infectious disease has occurred.

In summarizing Dr. Logan called particular attention to the importance of: Early recognition and removal in children; care of naso-pharnyx in cases of acute infectious diseases; the fact that large faucial tonsils usually indicate the presence of adenoids, though the reverse is not true; in adults, that the condition is not rare, and when present, has persisted since childhood and not developed since puberty; and that operation is warranted and indicated in every case, to relieve present conditions and to prevent future complications.

HOW SHALL THE DIAGNOSIS OF POST-NASAL ADENOIDS BE MADE IN YOUNG CHILDREN, WHEN RHINOLOGICAL EXAMINATION IS IMPOSSIBLE?

DR. CLARENCE C. RICE of New York read a paper with the above title. He said that a rhinoscopic examination was usually impossible in children under seven years of age. He spoke of two classes of cases, one in which there is respiratory obstruction only occasionally and intermittently, with a small quantity of adenoid tissue; the second class where there is permanent obstruction and continuous mouth breathing, with a large quantity of adenoids. He said that a small quantity of adenoid tissue was present in 95% of cases, and that in these cases, where a mirror cannot be used, a post-nasal curette is useful for examination and diagnosis, and if the adenoids are found, — for immediate operation without anesthesia. He claimed that the curette was better than the finger, and that by its use in the above way and in the abovementioned class of cases, he avoided two attacks upon the frightened child, and made the diagnosis and did the operation at one time.

DR. FARLOW of Boston, in discussion of the foregoing two papers, said that he agreed with Dr. Logan that there were many cases of adenoids in the adult overlooked, that the condition was an important one, and should be operated upon in every case. As to Dr. Rice's use of the curette, he objected to it seriously as dangerous and painful. He spoke of and recom-

mended the inspection of the naso-pharynx in children through the nose, after the use of very weak cocaine or adrenalin, or both.

DR. MAYER of New York objected to the use of the curette as Dr. Rice recommended, and called attention to the presence of small lymph follicles on the posterior wall of the pharynx, looking like the so-called follicular pharyngitis in adults, in most cases of adenoids, as a valuable aid in diagnosis, claiming that they were almost pathognomonic of the condition.

DR. DELEVAN of New York, DR. MACKENZIE of Baltimore, DR. SWAIN of New Haven, DR. MYLES of New York, DR. SIMPSON of New York, DR. NEWCOMB of New York and DR. LOGAN of Kansas City all objected to the proposed use of the curette and to any operation without anesthesia.

DR. NEWCOMB also called attention to the occasional prominence of the atlas projecting into the naso-pharynx so far as to interfere with use of the curette.

SOME CASES OF FACIAL ERYSIPELAS FROM EROSIONS OF THE NASAL SEPTUM.

DR. JOHN W. FARLOW of Boston read the above paper, and spoke first of the frequency of cases of recurrent facial erysipelas, without apparent cause, that is, without evident wound on the face for the entrance of the infection. He noted the importance in these cases of a thorough examination of the nose, especially the septum, as that is the most common site of small nasal lesions. He detailed the histories of several cases of facial erysipelas, selected from a large number, in which an abrasion or erosion was found on the septum, and in which a thorough antiseptic cleansing treatment of the nose was the important part of the treatment of the case.

DR. BLISS of Philadelphia, in discussion, said that he thought it very remarkable that of all the many operations upon the nose, both inside and outside, so few cases developed erysipelas. He said he knew of only one case.

DR. KING of New Orleans and DR. JOHNSTON of Baltimore each reported a case of erysipelas following operation upon the nose.

DR. FARLOW in closing said that he presented these reports merely to call attention to the frequent small lesions of the nose as the probable point of entrance of the infection, and to urge the importance of a thorough routine examination and careful antiseptic local treatment of the nose in these cases of facial erysipelas.

SECOND DAY. — WEDNESDAY, MAY 13.

THE ARCH OF THE PALATE.

DR. SWAIN of New Haven read the above paper. He referred to the usual explanations of the high-arched palate, such as lack of functional use of the nose from obstruction, differences of atmospheric pressure, etc., and the extension of these causes as also determining deflections of the septum, and called attention to the fact that many children had a high-arched palate who had no nasal obstruction, and *vice versa*.

In the Flathead Indians, who deformed the heads of their children by depression of the vertex for the first year of their lives, the author found that the arch of the palate was very low (though the septum was not affected), showing that outside influences tending to alter the shape of the skull can and do affect the palate. He said that the deformities of the arch were due, not to any one cause, but to many and complex factors. The nose in these cases is usually a non-functionating organ. In the new-born babe the palate is above the level of the Eustachian tube, at puberty below it, — and consequently the palate has grown down away from the base of the skull, this being due to the downward growth of the superior maxilla, the septum and the pteregoid process of the sphenoid. From improper or no functional activity of the nose, this downward growth may be stopped; and perhaps because the nasal obstruction prevents the proper aëration of the maxillary sinuses, the lack of air causing non-development, or atrophy. The author also called attention to the added weight of the cheeks and inferior maxilla, dragging on the outer part of the superior maxilla, when the mouth was constantly open and relaxed, thus tending to pull the sides together and to narrow the arch. He said also that the shape of the adult palate, as well as the alignment of the permanent teeth, depends largely upon the preservation of the first teeth as long as possible. When noting the great results in adults of the comparatively slight force used by dentists in straightening teeth, and spreading them apart, the author thought it not unreasonable to grant that the forces mentioned above, when acting upon young, soft and pliant bones, might easily be sufficient to cause all the deformities found in these cases.

DR. DELEVAN of New York, in discussion, called particular attention to what, he thought, were the two most important points of the paper; namely, the care and preservation of the first teeth, and the early attention to any nasal obstruction.

DR. MAKUEN of Philadelphia referred especially to the importance of nasal breathing, and noted the estimate made by some observers, that 70% of all people breathe through the mouth at night, even when there is no obstruction to nasal breathing.

DR. KING of New Orleans said that while he had not made any actual measurements in the negroes of the South, he had observed that deformities of the palate and adenoids were not so frequent as in whites; that adenoids, when present, were not often associated with palatal deformities, and that as a rule the palate was larger and the post-nasal space more roomy, and that therefore adenoids when present did not cause so much obstruction.

ACQUIRED CICATRICIAL DEFORMITIES IN THE RESPIRATORY TRACT, DUE TO OTHER CAUSES THAN SYPHILIS AND TRAUMATISM.

DR. G. HUDSON MAKUEN of Philadelphia presented this paper, and in opening the subject said that cases of this kind were rare. He had sent a circular letter to three hundred laryngologists all over the country asking for information and data, and had received notes of 447 cases, in only 167 of which, however, was a definite cause assignable. Of these 16% were due to diphtheria; 8% to scarlatina; 3% to lupus; 1.6% to tuberculosis; 1.5% to a combination of scarlatina and diphtheria; 1.1% to typhoid fever; and .5% to measles. The author gave histories of two cases of his own, and argued that, in these common acute infectious diseases, more care and attention should be given to the treatment of the throat and nose.

DR. FARLOW of Boston said, in discussion, that while diphtheria might cause moderate adhesions, between the tonsils and the pillars of the fauces, or between posterior pillar and the posterior pharyngeal wall, he did not believe that it could cause any very extensive adhesions or contractions. He had never seen a case, and thought that in many cases the history was defective, and that the real cause was syphilis.

In connection with the papers on sinus disease DR. GEORGE B. WOOD of Philadelphia showed a number of sections of a head of a six months' old child, which were of special interest as showing the size and relations of the sinuses in a child of that age.

MY LATEST IMPROVEMENTS IN THE RADICAL TREATMENT OF CHRONIC SUPPURATIONS OF THE ACCESSORY CAVITIES OF THE NOSE.

DR. H. LUC of Paris presented this paper, and considered in order the maxillary, frontal, ethmoid and sphenoid sinuses.

I. *Maxillary sinus.* — The author stated first that radical surgical treatment was to be limited strictly to the chronic forms. He noted the distinction to be made between two classes of cases; first, the properly so-called sinusitis, with a primary infection of its mucous membrane; and, second, cases where the pus does not originate in the sinus, but merely accumulates there, coming from a frontal or a dental abscess. In the latter cases washing out the sinus may effect a cure, in connection, of course, with proper treatment of the source of pus, namely, the frontal or dental inflammation.

In the former cases puncture and washing should be tried first, and if unsuccessful, should be followed by radical operation.

II. *Frontal sinus.* — Dr. Luc referred to the Ogston-Luc operation, and spoke of the frequent poor results from it in cases of very large sinuses, due to the closing of the nasal drainage opening before the complete healing and obliteration of the cavity of the sinus. This unpleasant result had led many to go back to the old method of leaving the wound open, or to use the Kuhnt method of resection of whole of anterior wall, with its consequent great deformity.

Dr. Luc recommended and now uses the Killian operation, a combination of the Ogston-Luc with the Kuhnt and the Jansen operations, thus getting the immediate closure of the wound and nasal drainage of the Ogston-Luc, the opening of the floor of the sinus of Jansen's, and the removal of a part of the anterior wall of the Kuhnt method, but preserving a bridge of bone between the two openings which lessens the deformity, and extending an opening to the ascending part of the maxillary bone, giving opportunity to enlarge the fronto-nasal opening, and also giving access to the ethmoid cells.

Dr. Luc recommends this operation for cases with large sinus and the Ogston-Luc operation for cases of small sinus.

III. *Ethmoid cells.* — These the author said were practically never involved alone, but always in connection with frontal or maxillary inflammation. They may be attacked through the nose, or as a sequel to operation on frontal or maxillary sinus; but the author claimed that it was impossible completely to destroy the ethmoid labyrinth through the nose, as the anterior cells cannot be reached without making an external bony opening. He spoke of one case in which, operating intra-nasally, he opened accidentally into the sphenoid sinus. This did no harm and suggested a new route of operation on that sinus, which he had employed frequently since that time.

IV. *Sphenoid sinus.* — Here Dr. Luc said that we could operate by intra-nasal or by external method, always the former if the sphenoid sinus alone is affected, and if there is room in the nose to work; always the latter if the maxillary sinus is also affected, or if we cannot get room to work in the nose. He noted that it was important to remove a large part of the anterior wall of the sinus.

(To be concluded.)

Recent Literature.

Les Obsessions et la Psychasthénic. Par les DRS. F. RAYMOND et PIERRE JANET. Tome ii. 8vo. pp. xxiv, 543, with twenty-two illustrations. Paris: Félix Alcan. 1903.

The present volume is the only one of the work that has come to our hand, and therefore a satisfactory review is hardly possible. It contains reports of two hundred and thirty-six cases of various forms of obsessions, illustrating the detailed medical and psychological study of obsessions by Dr. Janet in the first volume of the work, but, without the introductory volume, the collection of cases, rich and varied as it is, loses most of its value.

THE BOSTON

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OBESITY IN YOUTH.

THE doctrines of diminished metabolism in obesity and excessive metabolism in youth have received decided opposition from the recent studies of Rubner,[1] who has investigated these questions under exceptionally favorable conditions. Two brothers, eleven and ten years of age, and approximately the same height, weighing fifty-four and eighty-nine pounds respectively, served as subjects for his experiments. Each of these boys spent four days in a respiration calorimeter, during which time detailed observations were made. As a result Rubner found that the normal boy ate proportionately more than his fat brother — fifty-two calories per kilogram body weight in contrast to forty-four calories. This apparent disparity, however, disappeared when the actual surface of both boys capable of radiating heat was taken into account. Making allowance for this, the diet was practically the same. The extent of body surface is quite as important in calorimetric observations as is the body weight, and disregard of this factor has been responsible for many erroneous conclusions concerning the food of fat people. An interesting, but only apparent, exception to this law is furnished by cachectic individuals and those rapidly emaciating. In such persons the number of calories required to maintain equilibrium is less than would be supposed. This is due to the actual skin surface and body surface in such individuals not being identical. The formation of folds of skin brings two surfaces into apposition, and the heat-giving area is thus diminished. Instead of diminished metabolic activity in obesity, Rubner finds the evidence more in favor of the opposite condition. He calculated that thirty-five per cent of the weight of the fat boy in the experimen was composed of fat tissue. The cells in the remaining two thirds of the body were compelled to do the work for the whole body, and thus each cell was forced to do more than its natural share. This doubtless explains the fatigue which fat people usually feel on even moderate exertion.

Variations in the natural amount of bodily activity between childhood and adult life, in the duration and depth of sleep and in growth are other influences too often neglected in the inferences which are drawn from experiments in metabolism. When these are considered, it is found that the same laws which apply to metabolic activity in adult life are applicable in youth. Rubner furnishes proof for this statement by comparing the diet of a dwarf with that of an infant of similar weight. The dwarf, who was twenty years of age, weighed fourteen and a half pounds (six and six-tenths kilograms), and ate eighty calories per kilogram. This closely approximated the diet of a baby, weighing eleven and one-tenth pounds (five and four-tenths kilograms), who ate seventy calories per kilogram. The slight difference in favor of the dwarf is explained by the work which he performed during the experiment.

The causes of the obesity in the case of the boy above mentioned were, of course, not accurately known, but they appeared to be due to lack of exercise from disposition and to peculiarities in the diet from necessity. As nearly as could be ascertained, albumen formed an unusually small per cent of the total diet. Further, it was found that the fat boy failed to absorb twenty per cent of the albuminous food which he did eat, thus reducing the total available albumen still more. The natural result followed that he ate a proportionately large quantity of carbohydrate food. Such a diet, low in proteids and rich in carbohydrates, is known to favor the laying on of fat, and the boy's natural aversion to exercise increased this tendency.

[1] Beiträge zur Ernährung im Knabenalter mit besonderer Berücksichtigung der Fettsucht. Berlin, Hirschwald, 1902.

NURSING AS A PROFESSION.

IN our issue of July 2d reference was made to the movement which is now well under way of providing further preliminary training for

those who intend to take up the work of nursing. With this movement, as we then implied, has naturally come a tendency on the part of the leaders in the work of nursing and others to claim for their calling a distinct place as a profession. We suggested that it seemed to us questionable whether nursing, as ordinarily understood, could be placed in the category of the liberal professions, but implied that in the nature of its work it was rather to be regarded simply as a "calling." This question must sooner or later be definitely answered. If nursing is to be regarded as a liberal profession, it must naturally claim the privileges which go with this designation, the most natural of which is to advance very far beyond the stage which it has as yet attained.

In this connection, we are glad to call attention to a letter on this subject which appeared in our issue of July 16, in which the writer took the position that nursing from its very nature could not be regarded as a liberal profession. He alluded to the fact that the essence of a profession is progress and that the work of nursing does not permit of such development. We are inclined to agree wholly with this view of the question. While perfectly willing to grant that it is altogether probable that a class of persons will arise from the ranks of nurses who will occupy some sort of a middle position between the physician and his patient, we nevertheless are strongly of the opinion that these persons will not be nurses and will not represent the plain drudgery of nursing as is at present the case.

A man of much acumen, himself a physician, once remarked to us that the future of medical practice would probably be that physicians would become consultants and that nurses would become essentially practising physicians. That we are still far from this state of affairs is apparent; nevertheless there are many things pointing in the direction of the progress of nurses beyond the limits of their chosen calling into those which have heretofore been regarded as the domain of the physician. We are not inclined to regard this by any means as an unmitigated evil. On the contrary, it seems probable to us that many of the procedures which the physician in the past regarded as his prerogative may be as well, if not better, done by a carefully trained person of wide experience, whether man or woman, but what we do claim is that this function goes quite beyond our conception of nursing, which, as we understand it, is simply and solely to take care of the physical and mental wants of the sick under the direct supervision of a physician.

The present state of affairs is certainly in a measure due to the attitude of the profession itself. It has been shown that women trained as nurses are capable of taking medical responsibility, and physicians have not been slow to lay such responsibilities upon them. The natural and inevitable result of this has been that nurses have looked beyond the details of their work, and have been allowed to believe that nursing requires a semi-medical education. We are not in the least attempting to criticise this point of view, but we are convinced that it is desirable to face the facts as they are, and possibly to speculate regarding the future to which the present tendencies are likely to lead. We are sufficiently optimistic to think that on the whole the elevation of women who still regard themselves as nurses will be of general utility; but we are strongly opposed to the idea that the term "nursing" may still be used to designate this class of persons, and that nursing, as now understood, may be regarded as a profession. This does not deny that it may grow into a profession which will then have a far closer analogy to medical practice than to our possibly somewhat old-fashioned idea of nursing as such.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

WE are in receipt of the first number of an English journal with the above title, edited by Major R. H. Firth of the Royal Army Medical Corps. It is stated that this journal is the realization of a hope of many years. The necessity for such a periodical has long been recognized by the medical officers of the army, but in spite of various efforts it has not been possible to publish the journal until now. The object of the publication is to print original articles by officers of the Royal Army Medical Corps and others, to present bibliographical notes on articles of importance to the military services, to reproduce work done by other military and medical journals and to provide information bearing upon the army medical services. The need of such a journal in England is strongly felt, and it is with the hope that liberal contributions will be offered that the journal has finally come into existence. The first number discusses the question of hospital arrangements on board transports, and contains other articles and matter of general medical interest.

In spite of the rapid increase in the number of medical journals, we are inclined to think that any periodical which tends to elevate and bring

into greater prominence the medical branch of the army is desirable and should find a distinct place of usefulness. Experience has shown that many questions concerning medico-military matters are ripe for discussion, and it is both natural and proper that officers of the medical corps should desire to have their own medium of publication. We have no doubt that this journal will be a success and add something of positive value to the well-filled ranks of medical journalism.

MEDICAL NOTES.

CONTAGIOUS DISEASES IN CHICAGO. — According to the *Bulletin* of the Chicago Health Department, only 57 cases of contagious diseases — diphtheria, measles, scarlet fever, smallpox, etc. — were reported during the week ending July 18. This is the lowest number since September, 1901. In the corresponding week last year there were more than twice as many, — 119, — and the 34 cases of diphtheria and 14 cases of scarlet fever reported this week are one third and one half less than the respective number reported during the previous week. Measles, which has been epidemically prevalent for many months, is fast disappearing, as also is smallpox, the solitary reported case of which was that of an unvaccinated infant of six months.

GIFT TO MCGILL UNIVERSITY.— It is reported that by the will of the late James Cooper sixty thousand dollars is left to McGill University as a fund to establish a chair in the medical faculty for the teaching and study of internal medicine. It is to be known as the Cooper Endowment Fund, and will be paid two years after the death of the testator.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, July 29, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 33, scarlatina 15, typhoid fever 18, measles 12, smallpox 0.

DR. SIMON FLEXNER A GUEST OF THE BOSTON FLOATING HOSPITAL. — On one of the trips of the Boston Floating Hospital last week Dr. Simon Flexner of Philadelphia was a guest. He is in charge of certain work of a bacteriological sort being done under the auspices of the Rockefeller foundation, and is making a tour of inspection of those laboratories where the experimental work is being carried on, one of which is the Floating Hospital.

BERI-BERI ON A NEW BEDFORD WHALER.— Beri-beri is a sufficiently unusual disease to make the following report of interest: A whaling vessel from New Bedford is said to have had while on her cruise an outbreak of this disease. Seven men are reported dead, and ten more of the crew ill. The vessel has temporarily put in to St. Helena.

APPLICATIONS FOR REGISTRATION IN MEDICINE. — The recently held examination of applicants for registration in medicine in Massachusetts is said to have demanded the largest committee room in the State House, owing to the fact that upwards of two hundred applicants applied for the examination. Five examinations for several years past have been given annually, but it is likely that this number will be increased with the increasing number of applicants.

NEW YORK.

CARE OF MOTHERLESS INFANTS. — The joint committee on the care of motherless infants has just presented its fifth annual report to the State Charities Aid Association and the New York Association for Improving the Condition of the Poor, the two bodies which it represents. The number of infants received during the year was 178, of which 62 have been adopted by families, 26 died and 90 remain in the care of the committee. Although many of the infants had previously been subjected to exposure, neglect or ill-treatment, the committee reports that during the last two years the death-rate among their charges has been actually lower than the general death-rate among children of the same age in New York City. An innovation made has been the employment of wet nurses, and most of these have been Italian women. "There are a physical vigor and warmth of nature in the Italian mother," the report states, "which make her a most desirable nurse. She learns to love the 'bambino,' for whom she cares with a strength she does not appreciate until the parting." A considerable number of the infants received are those taken to Bellevue Hospital from police stations.

NOTES FROM THE PHILIPPINES.

PREJUDICE AGAINST BOVINE VIRUS. — An incident showing the different phases which sanitation assumes in the Philippine Islands is the recent request which the Board of Health has made to the sanitary authorities in India for some "Amil" vaccine virus. There are a number of East Indians in Manila, and these object to being vaccinated with bovine virus, as the cow is to them a sacred animal, and to be inoculated with lymph from it would mean a loss of their caste. They do not, however, object to vaccination with humanized virus taken from some

member of the Amil caste, to which they nearly all belong, and the Board of Health is now endeavoring to secure some of this virus in order to vaccinate them in a way which will not arouse their prejudices and opposition.

SIMULTANEOUS CHOLERA AND BUBONIC PLAGUE. — Another interesting fact connected with the recent reappearance of cholera in Manila has been the simultaneous occurrence of cholera and bubonic plague in the same individual. This has happened in four instances during the past ten days, all the persons so affected being Filipinos. The double infection was diagnosticated during life in one instance, was shown to exist by the four autopsies, and the conditions were confirmed in each case by bacteriological examination. Such double infection, while unexpected, is readily explainable. The incubation period of plague may be nine or ten days, while that of cholera may often be only of a few hours' duration. Both plague and cholera are most liable to occur in those living under highly unsanitary surroundings, and who are most liable to contract anything in the nature of infectious disease which may be present, both as a result of their environment and habits. It is certainly quite possible that an individual with an incubating infection of plague, lasting a number of days before development, may acquire a cholera infection, having a comparatively brief period of development, during the incubation period of his plague infection, so that both may appear at about the same time.

DESTRUCTION OF LOCUSTS.— Another kind of opposition has been raised against the destruction of the locusts which swarm in countless myriads over the most fertile districts of the islands and do an almost incalculable damage to crops. The health authorities have been inoculating these swarms of locusts with the grasshopper fungus, which is proving an effective agent in their destruction. Locusts, dried, raw, baked, fried, stewed, ground into powder, etc., form a staple article of diet among the poorer class of Filipinos, who can collect them by the bushel with little labor. This class of natives is now violently opposed to the extermination of the locusts and loss of this food supply. The big land owners and "haciendors," however, are as strongly in favor of the destruction of these insect pests, and their wishes usually soon control public opinion among the surrounding natives. One who has never seen a swarm of locusts can form no idea of their vast numbers and the damage they do to crops. In the distance a flying swarm looks like a dense cloud of smoke or dust, and when such a swarm is passing overhead the sun is obscured. Settling on a field of rice or cane, they work so swiftly that the field soon looks as if swept by fire. The appearance of a swarm is the signal for every native to turn out with large scoop nets, bags and baskets, and vast quantities of insects are caught for food. A single sweep of a scoop net in a flock often yields half a peck of the locusts. The natives say that they are very sweet and palatable, and are particularly fond of them when fried to a crisp in cocoanut oil.

UNSANITARY CONDITION OF "ESTEROS." — There is some little popular complaint against the unsanitary condition of the "esteros," or sluggish creeks which are practically open sewers and ramify all through the city of Manila. As there is only about a two-foot rise and fall of tide in them, and at this season they lose the scouring effect of the daily rains, they have become very foul. Nearly all of them are shallow, and the falling tide exposes large areas of foul-smelling mud flats to fester under the tropical sun. A general scheme of drainage and sewerage for the city is being prepared, and no temporary expedient can place these "esteros" in a satisfactory condition. Many are choked up so badly that the tides do not flush them, and in the absence of heavy rains they become practically large cesspools. The mere cleaning of them would be extremely laborious and expensive, even if proper apparatus were at hand for performing the work. It is possible that by the removal of boats, logs and similar obstructions, and by the dredging out of a few bars, the sluggish currents may be quickened and the "esteros" made to cleanse themselves more satisfactorily. Whatever can be done, the Board of Health proposes to do, and if cholera does not again become severe in the city it will be able to give proper attention to such work. Of course nothing short of dredging, straightening their course, building up the sides of the esteros with masonry, filling in the low places and bogs, and flushing on the ebb tide from tidal reservoirs placed above the head of navigation will ever be satisfactory — a scheme requiring much time, labor and money for its execution.

MEDICAL INSPECTION OF IMMIGRANTS. — Hereafter all immigrants arriving in the Philippine Islands will be subjected to a medical inspection by the surgeons of the Marine Hospital Service. The medical examinations will be conducted in connection with the regular inspections by immigration officers; and such aliens as may be certified to by the surgeons to be insane, idiots or suffering from a contagious

or loathsome disease, or whose mental or physical condition is such as to apparently affect their ability to earn a living, are to be excluded from the islands. This additional task will be hard for the Marine Hospital surgeons, who are already greatly overworked, and entirely too few in numbers to meet the conditions in the islands.

Miscellany.

MUNICIPAL SANITARIUM FOR CONSUMPTIVES.

COMMISSIONER FOLKS of the Department of Public Charities, New York, has officially presented to the Board of Estimate and Apportionment the following recommendations regarding the establishment of a municipal sanitarium for consumptives: That the board request the Board of Health to select a site for such sanitarium at the earliest practicable moment, and, in co-operation with the Board of Trustees of Bellevue and allied hospitals, secure the necessary consents therefor; that the board request these trustees to co-operate with the Board of Health in these matters and to establish and maintain thereon, when the use of such site has been secured, a sanitarium for consumptives; that an appropriation of $30,000 be made, through the issue of special revenue bonds, to the trustees, to cover the cost of selection of site and maintenance during the remainder of the current year; that an issue of bonds to the amount of $400,000 be authorized for the construction by the trustees of a suitable sanitarium.

The commissioner's recommendations were accompanied with a report on the general subject to the mayor, as chairman of the board. In it is stated that a sanitarium which would accommodate 500 patients could be established for $407,000, and that the estimated expense of maintenance would be $1 a day for each patient. It is believed, however, that if sufficient land were provided to permit dairying, poultry-raising and fruit and vegetable growing, a considerable income might be had from these sources. The commissioner deems it important that the hospital should be located as near the city as possible, and he is convinced that a satisfactory site can be procured within fifty, and probably within forty, miles of New York. Thus conveniently located, it would be possible for the relatives and friends of the patients to visit them at a comparatively small expenditure of time and money; and this consideration, it is believed, would have an important influence upon the willingness of patients to go to the sanitarium. Having referred to a number of requirements for location, which after consultation with eminent medical authorities he regards as essential, the commissioner goes on to say that for a hospital to accomodate 500 patients there should be secured not less than 250 acres (preferably 400), and that land of the character desired should not cost more than $250 an acre. Regarding the type of buildings required, the report states that with the exception of administration and other service buildings, they need be only very inexpensive, as for dormitory purposes cheap wooden structures and tent cottages would probably be better suited to the needs of most of the patients than more substantial buildings.

The Board of Aldermen has already expressed its approval of the project, but should the Board of Estimate and Apportionment decide to adopt the recommendations mentioned, it is quite possible that there may be considerable difficulty in securing a suitable site for the hospital. After the passage of the act which authorized cities of the first class to select and purchase sites for sanitariums for consumptives, the committee on tuberculosis of the Charity Organization Society waited on the president of the Board of Health, and requested him to exercise the power and authority conferred by the law upon his department. Opportunity for action was promptly afforded; ninety-five acres of land being offered in Orange County, at a point said to be an admirable site for the hospital, the scheme of which had been carefully mapped out. The plan fell through, however, as opposition immediately developed from a sporting club which owned territory adjacent to the proffered tract. The influence brought to bear upon the legislature was strong enough to secure the working through of a bill which, as has been mentioned in the JOURNAL, added to the restrictions on the establishment of such hospitals the consent of the county and local supervisors. In the city Tuberculosis Infirmary on Blackwell's Island, there were on July 1 three hundred and ninety-one patients.

Correspondence.

ALCOHOL *VERSUS* ALCOHOLICS.

BOSTON, July 26, 1903.

MR. EDITOR: Among several valuable points in the paper upon alcohol by Dr. R. C. Cabot, printed in last week's JOURNAL, one not least in value is the recognition that experiments upon well men are not exact indications of the action of alcohol upon the sick. Another is criticism of the attempts to judge of the effect of therapeutic doses by means of observations upon toxic doses.

Permit me to suggest yet another fallacy running through much of the current discussion upon this subject, one which Dr. Cabot suggests, but upon which he lays much less stress than upon the two already mentioned, — I mean neglect to consider the combinations in which alcohol is given. When a laboratory man says alcohol, he means alcohol. Clinicians, however, have formed an unfortunate habit of speaking of wines, spirits, etc., as alcohol, ignoring the presence of sugar, water, acids, ethers, hops, peat, smoke and so on. To assume without inquiry that these articles have no effect is unscientific. In some cases it is to assume that which is at least improbable. Whether true or not, it is a matter of common report that drunkenness differs somewhat according to the drink that has produced it. Again, there are patients who can drink brandy but not whiskey; others who can drink American whiskey but not Scotch; the penalty in each case being a disturbed digestion. It is at least possible that temperature, blood pressure and the rest may also be affected by the other ingredients of wines, for instance, as well as by the alcohol which they contain. Thus, for clinical purposes, the valuable work begun on alcohol must be supplemented by similar work on alcoholics. Above all, we must not confound the one with the other.

Yours truly,

EDWARD M. BUCKINGHAM.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 18, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Scarlet fever.
New York . .	3,785,156	1,503	676	38.12	8.58	2.86	9.11	.73
Chicago . . .	1,885,000	519	169	31.39	7.51	1.72	15.21	.77
Philadelphia	1,378,527	546	227	39.18	4.57	1.09	21.42	.18
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	257	124	35.02	3.50	1.17	21.40	.38
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	150	13	40.67	4.67	2.66	17.33	2.00
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee . .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	88	47	43.17	4.54	.45	31.80	—
Boston . . .	603,163	215	67	25.58	13.02	2.32	12.56	1.39
Worcester . .	132,044	43	25	25.57	11.65	—	20.92	—
Fall River . .	115,549	104	80	62.50	2.88	.96	56.73	.96
Lowell . . .	101,959	52	27	38.46	—	—	28.84	1.92
Cambridge .	98,639	29	8	41.37	3.45	3.45	20.69	3.45
Lynn	72,497	19	4	5.26	—	—	—	—
Lawrence . .	69,766	32	22	53.12	—	—	43.75	3.12
Springfield .	69,389	—	—	—	—	—	—	—
Somerville .	68,110	13	1	30.80	7.70	—	—	—
New Bedford	67,188	39	26	25.64	7.69	—	17.95	5.13
Holyoke . . .	49,286	22	15	50.00	9.09	—	40.90	4.54
Brockton . .	44,873	10	4	10.00	—	—	—	—
Haverhill . .	42,104	15	5	26.67	13.33	—	—	—
Newton . . .	37,794	6	1	—	16.67	—	—	—
Salem	36,876	10	4	20.00	—	—	—	—
Malden . . .	36,286	6	3	16.67	—	—	—	—
Chelsea . . .	35,876	11	1	—	—	—	—	—
Fitchburg . .	35,069	9	5	22.22	—	11.11	—	—
Taunton . . .	33,656	9	4	22.22	—	22.22	—	—
Everett . . .	28,620	9	3	11.11	—	—	11.11	—
North Adams	27,862	3	1	33.33	—	—	—	—
Gloucester .	26,121	7	1	42.90	—	28.60	—	—
Quincy . . .	26,042	5	1	—	20.00	—	—	—
Waltham . .	25,198	6	1	—	16.67	—	—	—
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,589	3	—	66.67	—	—	—	—
Chicopee . .	21,031	9	4	11.11	—	—	11.11	—
Medford . . .	20,962	4	—	—	25.00	—	—	—
Northampton	19,883	5	1	—	—	—	—	—
Beverly . . .	15,302	—	—	—	—	—	—	—
Clinton . . .	15,161	4	0	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	6	0	—	16.67	—	—	—
Woburn . . .	14,300	6	—	50.00	16.67	—	16.67	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	3	2	—	33.33	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,669	4	0	—	—	—	—	—
Melrose . . .	13,600	4	1	—	25.00	—	—	—
Westfield . .	13,418	9	3	22.22	—	—	—	11.11
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	1	1	100.00	—	—	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody . . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	3	0	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	2	—	—	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,800; under five years of age, 1,577; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,371, acute lung diseases 266, consumption 331, scarlet fever 31, whooping cough 19, cerebrospinal meningitis 4, smallpox 22, erysipelas 3, measles 25, typhoid fever 54, diarrheal diseases 702, diphtheria and croup 78.

From whooping cough, New York 2, Chicago 5, Philadelphia 5, Baltimore 1, Pittsburg, Boston and Lowell, 1 each. From erysipelas, Philadelphia, Boston and Worcester, 1 each. From smallpox, Philadelphia 14, Pittsburg 8.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending July 4, the death-rate was 14.4. Deaths reported, 4,169; acute diseases of the respiratory organs (London) 164, whooping cough 109, diphtheria 53, measles 106, smallpox 7, scarlet fever 37.

The death-rate ranged from 5.3 in Hornsey to 23.3 in Merthyr Tydfil; London 13.9, West Ham 13.1, Brighton 11.2, Portsmouth 15.5, Southampton 12.3, Plymouth 17.2, Bristol 13.5, Birmingham 13.9, Leicester 11.6, Nottingham 16.5, Bolton 15.6, Manchester 17.1, Salford 13.8, Bradford 14.0, Leeds 14.2, Hull 14.8, Newcastle-on-Tyne 16.7, Cardiff 16.3, Rhondda 12.2, Liverpool 19.0, Coventry 17.9.

METEOROLOGICAL RECORD.

For the week ending July 18, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	We'th'r * 8.00 A.M.	We'th'r * 8.00 P.M.	Rainfall in inches.
S. . 12	29.72	78	88	68	51	68	60	N W	S W	8	12	C.	R.	T.
M. . 13	29.71	70	75	66	79	68	74	N	W	8	10	O.	F.	.02
T. . 14	29.80	72	80	63	52	73	62	W	W	15	7	O.	F.	.04
W . 15	29.78	67	75	59	66	53	60	W	W	6	10	C.	C.	O.
T. . 16	29.87	64	74	55	66	66	66	W	W	15	9	C.	C.	.01
F. . 17	30.00	70	81	59	60	44	52	W	S W	9	9	C.	C.	O.
S. . 18	29.93	70	79	61	58	76	67	S	S	6	14	F.	R.	T.
☞	29.83		79	62			63							.07

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY, WEEK ENDING JULY 25, 1903.

J. C. BOYD, medical director. Commissioned medical director, with rank of captain, from June 20, 1903.

E. O. HUNTINGTON, surgeon. Detached from the "Maine" and ordered to the Naval Hospital, Navy Yard, New York, N. Y., for treatment.

R. K. SMITH, A. W. DUNBAR, A. FARENHOLT, C. P. BAGG, E. J. GROW, M. S. ELLIOTT, surgeons. Commissioned surgeons with the rank of lieutenant-commander, from March 3, 1903.

R. W. PLUMMER, passed assistant surgeon. Ordered to the "Maine."

C. E. RYDER, J. A. RANDALL, assistant surgeons. Appointed assistant surgeons with rank of lieutenant, junior grade, from June 26, 1903.

C. P. KINDLEBERGER, surgeon. Ordered to the "Independence."

A. STUART, assistant surgeon. Granted sick leave for two months.

G. P. LUMSDEN, surgeon. Detached from the Naval Station, Port Royal, S. C., August 1, and ordered to the Torpedo Station, Newport, R. I.

R. M. KENNEDY, surgeon. Detached from the Torpedo Station, Newport, R. I., and ordered to the "Dixie."

A. H. WISE, C. T. GRAYSON, acting assistant surgeons. Appointed acting assistant surgeons, with rank of lieutenant, junior grade, from July 14, 1903.

P. L. COCKE, acting assistant surgeon. Detached from the "Chesapeake" and ordered to the Naval Hospital, New York, N. Y., for treatment.

BOOKS AND PAMPHLETS RECEIVED.

The Practical Medicine Series of Year Books, comprising ten volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the general editorial charge of Gustavus P. Head, M.D. Vol. VII. Chicago, Ill.: The Year Book Publishers. June, 1903.

International Clinics, a Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and other Topics of interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by A. O. J. Kelly, A.M., M.D., with the collaboration of eleven other physicians, with regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Vol. II. Thirteenth Series. Illustrated. Philadelphia: J. B. Lippincott Co. 1903.

A Text-book of Surgery for Students and Practitioners. By George Emerson Brewer, A.M., M.D. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1903.

The Medical Epitome Series. Microscopy and Bacteriology. A Manual for Students and Practitioners. By P. E. Archinard, A.M., M.D. Series edited by V. C. Pedersen, A.M., M.D. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1903.

Address.

THE SHATTUCK LECTURE.

THE SOURCES, FAVORING CONDITIONS AND PROPHYLAXIS OF MALARIA IN TEMPERATE CLIMATES, WITH SPECIAL REFERENCE TO MASSACHUSETTS.*

BY THEOBALD SMITH, M.D., BOSTON.

(Concluded from No. 5, page 118.)

On the West Frisian coast, similar work was carried on by natives from 1888 to 1900 without the appearance of malaria. In 1899 to 1901 the work was done by Dutch laborers of the company furnishing the party above referred to and malaria appeared. These laborers came from a region in which malaria is endemic. Near the mouth of the Ems River malaria appeared during the construction of harbors and a lock on which one hundred Italian workmen were engaged. This subject is considered of so much importance that the government has established a special laboratory at Wilhelmshafen, where construction work is being carried on to prevent the outbreak of malaria among the workmen and the inhabitants. Anopheles is abundant in the localities referred to.

Among the outbreaks of malaria which are of more than usual interest are such as occur among the inmates of schools, prisons and institutions of one kind and another. Persons are now and then attacked who have been confined as prisoners.

The few instances which have come under my immediate observation were always near breeding places of Anopheles, and some of the inmates, gathered together from various localities, were evidently old cases of malarial infection or else from places where malaria is endemic. In several cases such persons would reveal their chronic infection by passing through an attack after they had left their home in the endemic territory and settled down in their new abode.

Martini [54] has recently given a very plausible explanation of the early and repeated occurrence of malaria in certain houses. The curves of malaria in the endemic region of North Germany show two maxima: one in April – May, the other in August – September. Last year Martini came to the conclusion, after a study of the local conditions, that the early cases are due to hibernating mosquitoes which are called from their hiding places by the great warmth of the dwellings. They feed upon the blood of persons who have passed through attacks the previous season and find sufficient warmth in the houses to mature and transmit the parasites to other persons in the same dwelling.

There are certain warm days in March and April when mosquitoes leave their hiding places and sting vigorously whenever the opportunity offers. This year March 14 was one of these enticing days, and I was able to capture a considerable number of females. In a school not far from Boston, situated in a locality favorable to *A. maculipennis*, the first case appeared on April 8. The infection was probably carried by mosquitoes which swarmed March 14, and which infected themselves on that day or later from some latent case dating back to a former season. We should expect to encounter cases about three weeks after such early warm days, which allows for the ripening of the sporozoites and the period of incubation of the new case.

It might be supposed that malaria, once established in a house, can pass from one member of a family to another and that cases may be looked for every three weeks during the mosquito season. If this were true, the contagious character would have been recognized long ago. In the foregoing pages I have endeavored to show why this would not be likely to occur. The patients attacked are treated promptly and gametes cannot form. It may also occur that unusually susceptible persons, even if not treated, do not form gametes for a time. Occasionally, however, the successive illness of members of the same family is noticed. Thus, Dr. Bronson, in the report from which I have already quoted, made the following statement in 1871:

> The frequency with which the several members of a family, in a previously healthy neighborhood, have sickened one after another when once the complaint was introduced, often suggested to Dr. Barker the old idea of contagion. It must be admitted that authority is opposed to this idea, but I do not think the question yet settled.

In looking over some records which I collected with considerable care about six years ago, in a town then recently infected with malaria as a result of extensive public improvements, I find that house epidemics did not figure to any extent. In one family, consisting of two adults and five children, the father was taken with quotidian chills, and a child three years old who slept with him was attacked with tertian fever three weeks later. Here there is some evidence of transmission, but it may have been an accidental coincidence.

In a family of six the father was attacked in May, but no other members subsequently. In a family of nine, consisting of the parents and seven children, the father and a child two and one-half years old were attacked in July, within a few days of each other. No other cases occurred later.

In a family of four, only the mother was attacked, in July. In a family of five, only the father was attacked, in August. In a family of eleven, mostly grown up, two daughters were attacked within a few days of each other, in August. About a month later one other member was taken ill.

A number of other illustrations might be given which would bring out substantially the same fact: large families of whom but one or two, rarely three, are attacked, and usually simul-

*Delivered before The Massachusetts Medical Society, June 9, 1903.

taneously. The houses do not become foci of the disease.

The facts which have been cited to show that houses do not necessarily retain malarial infection, probably because the blood of the diseased members does not produce fully ripe gametes, naturally leads to that very important phase of our subject which relates to the spontaneous disappearance of malaria.

A fact which stands out prominently in the eminently interesting chronicle of New England's ague spots is the disappearance of this malady after it had prevailed for a time. Tradition represents it very prevalent in the earliest colonial days, but the practitioners of the early quarter of the nineteenth century did not see much of it.

The testimony from various parts of the temperate zone seems to be the same, that places once malarial are now entirely free. Certain portions of England, France, North Germany, and the Netherlands have passed through periods of malarial endemicity. In such places Anopheles are still present, but the virus has disappeared. Farther south the process may have been the reverse of this. The territory about the mouth of the Tiber, now thoroughly infected, used to be a summer resort for the Romans. The Roman Campagna shows signs of former active cultivation and occupation. In our own state, the epidemics associated with public works have, as a rule, promptly subsided after the work was completed, and in some instances almost completely disappeared.

This transient visitation of intermittent fever may be ascribed, in our climate at least, to several causes, chief among which is the prompt treatment of the disease and the consequent incapacity of the patient to infect mosquitoes. The general conditions are also quite unfavorable. Among these are the thin population in the rural districts, the scattered homes, the general scarcity of mosquitoes of the genus Anopheles, the occasional cold summers and the seasonable interruption of the propagation of mosquitoes by winter. Where one or more of these conditions unfavorable to transmission are suppressed, as in years of drought, in a dense rural population near stagnant water, or among an illiterate, ignorant class of people among whom cases go untreated, endemicity may reasonably be expected. The longer it is allowed to proceed unchecked, the more difficult its final eradication.

The disappearance of malarial infection from large territories in European countries is probably due to the decrease of wars of invasion, and hence of camp life of soldiers in infected regions, and of infected soldiers from malarial regions in territory hitherto free from infection. The lack of any systematic use of quinine greatly aided the disease under these conditions.

The spontaneous disappearance of malaria is an indication that it was forcibly and overwhelmingly imported at one time, and that it cannot re-establish itself except under certain new industrial conditions, simulating camp life in many respects, such as the laborers' camps, rural schools, prisons, hospitals and factories.

In the foregoing brief review of the incidence of malaria in our state, I have purposely avoided going into detail concerning local epidemics which I have examined more or less in detail. The reader may readily consult for himself the published documents referred to at the end of this paper, in which the essential data have been brought together.

Though much has been written upon this subject, the student finds great difficulty in utilizing past evidence because there is, as a rule, complete silence concerning the, to us, most important factor, the human carriers of the infection. It is for this reason that I have been induced to step slightly beyond the bounds of the severely critical treatment of evidence in this lecture. My object has been to stimulate physicians throughout our state to collect facts from the new standpoint, for only in this way can the views maintained in this paper be rigorously tested. All biological research of medical problems must finally meet its fate for good or ill by being confronted with the human patient, and this confrontation rests entirely in the hands of the physician.

PROPHYLAXIS.

It would be unfortunate if, after the tendency of our city population to spread into the country had been fully established, malaria should come to fasten itself upon such population and drive it back into the heart of the cities. There is at present no immediate prospect of such a calamity, yet the increase of rural population in density without adequate improvement in environment might lead gradually to endemicity of malaria.

The number of people in our state, living in an essentially rural environment is larger than is generally supposed. The twelfth census gives the total population of the State as 2,805,346. In eleven cities, having each a population of over 40,000, the total number of inhabitants is approximately 1,228,000. Of this number, many live in the outskirts in what is practically rural environment. This class may be allowed to offset those living in the heart of the smaller cities, not included in our estimate, leaving about one and one-half million inhabitants as country residents. Of the other half, the larger number visit the country more or less and are, to a certain degree, exposed to prevailing malarial influences.

The means to be resorted to, in preventing and suppressing malaria, will, without doubt, occur to those who have read the foregoing pages, and any special suggestions may seem superfluous. Yet, in view of the danger which is always likely to beset the awakening public sense and responsibility of going from one extreme to the other, from ignorance and apathy to a too vigorous, wasteful and often injurious campaign, it seems best briefly to summarize the conditions to be

met and the simplest means of attaining the desired end. The two things plainly to be done are to suppress Anopheles as far as possible and to shield the malaria patient so that Anopheles cannot become infected.

In localities where malaria is not known to exist, but where there are breeding places of Anopheles, the destruction of such breeding grounds is not essential from a public health standpoint. If, however, in such or similar localities, public works are to be undertaken, the situation is entirely changed. Great care must be taken to prevent the introduction of malaria. There should be, at the outset and before any digging or other open-air work is undertaken, a thorough biological survey by a competent person of the entire locality which may come under the aerial influence of such work. Breeding places of mosquitoes should be carefully noted and plotted on a suitable map. For this purpose the inspection should be made in the spring, the summer and the fall, as the conditions are likely to be quite different in different seasons. Allowance should be made for drought and the conversion into breeding places of bodies of water free from mosquito larvæ during seasons of ordinary rainfall.

The effect of the work to be undertaken upon drainage, either temporarily or permanently, should be carefully considered. Especially the building of embankments and roadways should be allowed only when their probable effect upon surface water is not favorable to stagnation. Excavations for brickyards, for material for roadways, trolleys, etc., should be forbidden if the ground water level will be exposed thereby and a stagnant pool created. The sins of railroad building, committed in the past, are numerous and practically irremediable. No new ones should be permitted. One of the richest breeding grounds of Anopheles about Boston with which I am acquainted is a triangular piece of marsh completely shut in by railroad embankments and converted into a fresh water pool.[55]

The treatment of existing breeding places, before and during the progress of work by gangs of laborers, may be palliative or radical. The palliative method, now so well known, consists in covering the surface of stagnant, mosquito-breeding bodies of water with some grade of petroleum oil. The oil, which is scattered over the surface by pouring, by spreading with a broom dipped into the oil, or by the use of pump and hose with sprinkler, etc., forms a thin film which interferes with the respiration of the larvæ and kills them. The film disappears by evaporation and must be renewed every two or three weeks, according to conditions.* The amount of light fuel oil required is approximately one ounce to fifteen square feet, according to Howard. According to Kerschbaumer (60, p. 119) one square meter requires somewhat more than 0.5 liter of petroleum to completely cover the surface. This would be approximately 21 oz. to 15 square feet. Why he uses so much I am unable to explain. Palliatives in the shape of petroleum or its combinations should not be used upon water unless the larvæ of mosquitoes have actually been found in it. The interference with the normal aquatic life may lead to as yet unrecognized, undesirable results.

A vigorous campaign against all mosquitoes was waged during 1901 and 1902, in the town of Brookline under the local board of health, by Dr. H. L. Chase, and described by him recently.[57] This work done in our midst, and adapted to conditions prevailing in our state, may well serve as a model and guide for other towns where a destruction of all mosquitoes is desired.

Wherever the breeding can be suppressed by natural methods as contrasted with the artificial one of poisoning or asphyxiating the larvæ it should be done. In level meadows the open ditches, if more or less continuously filled with water, should be replaced by some form of covered drains. Shallow pools in which fishes cannot subsist should be filled up. Brooks should be kept free from débris washed down or thrown into them. Such débris provides quiet pools where larvæ are usually found if not elsewhere. The larger streams and rivers usually are free, but the banks should be searched for detached pools. In case of very small rivulets, ditches or brooks, some flushing device may be useful. The water may be dammed for a certain length of time and then discharged all at once. The larvæ will be swept into larger bodies of water and there destroyed.*

It is of interest to observe the want of topographical knowledge of suspicious bodies of water on the part of intelligent inhabitants. We may truly speak of the unexplored wilderness of the average town brook. The land is cultivated to within a certain number of yards of such a brook or stream and an impenetrable tangle of vegetation guards it from intrusion on both sides. Its presence even may be unknown to many who have frequently glanced at the line of bushes and stunted trees under which it is concealed. It has been claimed that mosquitoes will not breed in water thoroughly shaded by trees, shrubs and other vegetation. This may be true to a certain extent, but larvæ are certainly found in shaded pools. In any event, our brooks should be made accessible to inspection even though the vegetation on the banks be largely preserved. Even the greatest care in maintaining the bed of a brook free from obstructions may not avail in times of drought. Pools will form and larvæ will appear in them. Occasional petrolizing or flushing may then be necessary if malaria prevails.

Swamps are usually regarded as fertile sources of mosquitoes, and if actual inspection should prove that the suspicion is true, petrolizing, per-

* Recently a proprietary substance known as Phinotas oil has come into use. It is said to represent some combinatoin of petroleum. It sinks to the bottom when applied and subsequently rises again. It is said to kill all life in waters treated with it.

* I found after writing this that Kerschbaumer has also recommended this device of periodic flushing, especially in dry seasons (60, p. 130.)

manent flooding, or drainage are the only remedies. Not all swampy ground favors mosquitoes, however. I have repeatedly been surprised in failing to find a single specimen in them.

The expansion of our systems of parks and reservations, and the increasing patronage which these open-air spaces are receiving from the public housed in the heart of our cities, make it more and more necesssary to inspect for mosquito larvæ the bodies of water, usually artificial, which are scattered over these reservations. Neglect of this precaution might easily convert our parks into centers for distributing malaria to a population otherwise sheltered from it in the confines of the city. Squads of laborers are frequently employed in the reservations and may infect the mosquitoes. I recall one case in a child living near a large park whose infection could hardly have come from any other source.

Since excavation and other out-of-door work may be undertaken at almost any time in the suburbs of cities, the campaign against the mosquito in such territory should not be allowed to flag, but should be pushed vigorously until all breeding places have been destroyed or at least controlled by sanitary authorities.

The frequent appearance of malaria in the heart of cities at present is in many instances traceable to extensive excavations near by, but considering the summer exodus from our large cities, which includes almost every one nowadays, if only for a half holiday, the sources of urban malaria may be many, and impossible to locate.

In rural communities rain-barrels and open catch basins, which are usually inhabited by Culex larvæ, should also be searched to note any Anopheles larvæ which may have acclimated themselves. Privy vaults have been found to be good breeding places for Culex in regions farther south.

Fortunately for us, salt marshes, though very prolific in mosquitoes of the genus Culex, do not form breeding places for Anopheles. The immunity from malaria of our seacoast and the banks of estuaries under tidal influence has long been known, and it forms an agreeable confirmation of scientific studies which eliminate Culex as transmitters of malaria.[55] The late Dr. Greenleaf,[58] who had given much attention to intermittent fever about Boston, showed that the estuary of the Charles River as far as Watertown could not be regarded as a factor in malaria, as there were no cases along the river bank. He also found the park police along the estuary free from malaria.

The extermination of the hosts of mosquitoes bred in such marshes does not come within the scope of this paper. It may, however be said that if attempts made to drain such marshes of the salt water are successful, care must be taken to exclude fresh water from low places in them, otherwise Anopheles may move in where Culex was driven out.

During the progress of open-air work requiring the employment of large bodies of men who must live in camps, there should be in addition to a thorough control of the breeding places of mosquitoes an equally thorough sanitary supervision of the laborers.

Since much of the infection of mosquitoes and human beings goes on after dark, the camps should not be placed near the center of population nor near small bodies of water, unless the latter can be kept free from larvæ. The laborers should be inspected from time to time, and any suffering from malaria removed to some hospital or other place where they can be adequately protected from mosquitoes. Notification of the disease among the inhabitants should be insisted on at such times, and the sale of quinine by druggists reported to the local health authorities. Where the Anopheles mosquitoes cannot be satisfactorily controlled, the laborers' camps should be well screened and the latter forbidden to move about after dark. Whenever the mosquitoes are properly taken care of, the personal freedom of the laborers need not be interfered with to this extent.

It would be of interest to study carefully the health of any town where large public works are being carried on with foreign labor but where the workmen scatter after dark to different houses; also where native labor is being employed exclusively.

Where malaria has been prevalent for some years, and where it has assumed an endemic character by cropping out under various conditions in the inhabitants, as a result of latent infection, the difficulty of completely eradicating the infection is great, because the number of carriers of the parasite is large and mosquitoes may infect themselves readily. Under such circumstances, it will generally be found that the watercourses, swamps and ponds have been sadly neglected by an indifferent, indolent public. Streams are used as depositories for all kinds of refuse and the conduits are out of repair. Sometimes railroads are to blame for cutting off portions of ponds, lakes, etc., and converting them into stagnant swamps. In some places, improvements undertaken years ago have left the territory more favorable for mosquitoes. In one town I saw an abandoned portion of a river bed favorable for breeding mosquitoes which had been left by the artificial straightening of the course of the river. In almost any town signs of some past favor to mosquitoes, ignorantly bestowed, are found by the interested observer.

Vigorous effort to reduce the mosquitoes coupled with popular instruction concerning personal protection against mosquitoes, prompt treatment of individual cases and the necessity for concerted action, should succeed in every case in a climate like our own. Such success may not be realized for several years, because the people can only gradually rid themselves of latent infection.

In all efforts to suppress malaria by the destruc-

tion of mosquitoes it should be borne in mind that those breeding places nearest the bulk of the population should be attacked first and then, with increased means and assurance of success, the territory under surveillance should be gradually expanded. Breeding places over half a mile from dwellings are regarded by many observers as not likely to be of much consequence, yet they should be dealt with, if possible, for they serve as a source for the stocking of nearer territory.

The question naturally arises in our minds in reflecting upon this important subject whether, with increasing density of population, malaria will eventually succeed in fastening itself permanently upon the state in spite of efforts made to prevent and suppress it along the lines indicated. Fortunately no capital spent upon the radical extermination of the mosquito will be wasted. Whatever is done in this direction will redound to the general good of the people. The campaign against the mosquito will lead to a general cleaning up and to the cultivation of waste land; it will acquaint us with our own brooks now overgrown and concealed; it will tend to bring our dispersed and shattered streams back into their natural beds by the removal of unnecessary dams; it will prevent the private transportation interests from riding roughshod over the land, gouging out here and there unsightly holes and leaving them to choke up with water plants. Intensive cultivation will do much to repair the damage done by neglect of arable land. We shall be even more careful about permitting the pollution of our streams than heretofore if, as I believe, it tends to favor the mosquito larvæ.

The success of the struggle against an endemicity of malaria is favored by our climate, which is purified annually by frost. Only a comparatively small number of mosquitoes survive, and these must re-infect themselves again in the spring. Even under very favorable conditions it takes a whole summer for them to gather enough momentum to produce an epidemic in the late summer and early fall, when the frost again sweeps them away.

On the other hand, there are increasing difficulties to contend with, as the growth of population continues. The cosmopolitan character of our immigration and the steady stream of people from malarial foci in Europe tend to keep up the supply of infection in our midst. The tendency of gathering a fairly dense population in mill-towns, often in the midst of extensive breeding grounds of mosquitoes, makes them compare well in opportunities for infection with the migrating and transitory laborers' camp. Fortunately this *urbs in rure* population at present does not come from malarial districts to any extent, and hence they have been comparatively free from malaria with a few marked exceptions.

We must also bear in mind that we have arrayed nature herself against us in this struggle against a malarial climate. The great fluctuation in the volume of water in our streams from season to season, the resulting tendency toward bringing down large quantities of silt during freshets, which gradually choke the currents in the low lands and cause the stream to widen as it grows shallower, are all processes in favor of the mosquito. The deforestation of the land feeding these streams is largely to blame for these conditions, and, as it continues, who may feel certain that our descendants living in the rich river valleys may not assume the sallow hue of malarial cachexia and drag along a miserable existence for which the greed of their forefathers is mainly to blame? It is safe to predict that there will not be enough physical vigor in these descendants of a highly conventionalized nation to successfully imitate the immunizing capacity of the African native. They will give way to more sturdy immigrants or else the land will be abandoned.

In sketching this future possibility, I do not wish to be discouraging, but simply to stimulate our people because we have still in our grasp the chances for ultimate success.

It is to be hoped that as our control over malaria increases, the paralyzing sensitiveness of communities upon this matter may give way to a more active co-operation with the investigator who is endeavoring to elucidate the local causes of the disease and who is powerless, without the assistance of the public and the medical profession, to make an adequate investigation. The hearty co-operation of the members of the medical profession is of special importance, since they meet the disease in its only visible manifestation, the paroxysm in the human subject. In nearly every community some one or more physicians may be found who are prepared to assist and give their time, who are personally interested in the scientific problems involved and their practical value, and who are prepared to meet the slow returns of science by adequate outlay of time and strength. To many of these I am indebted for valuable assistance given ungrudgingly. With the continued co-operation and assistance of these disinterested helpers, medical science may be able to solve the many minor problems which still surround this subject, and public health may be in position soon to deal more firmly and radically with local causes.

SUMMARY.

(1) There is no evidence that any but the tertian form of malarial fever can be propagated in Massachusetts.

(2) The original source of tertian infection must be looked for in the blood of individuals coming from permanently infected localities in our own country and in Southern Europe.

(3) There is no definite information as to the stage of disease or relative immunity in which mosquitoes may become infected, but analogy with similar diseases of animal life indicate that the gametes are not formed early in the disease, and that relatively immune persons are the most dangerous, especially after fresh exposure, be-

cause in them gametes form very promptly without causing much or any clinical disturbance.

(4) The dissemination of infection is most easily promoted in our latitude when people live in a crowded condition, unprotected from mosquitoes and near breeding places of Anopheles.

(5) The decline and disappearance of malaria after importation and epidemic prevalence is in part due to relative isolation of the inhabitants and protection by quinine and from mosquitoes, and in part to the absence of persons partially immunized by long exposure in endemic localities.

(6) There is some evidence that sewage pollution in surface waters favors mosquito larvæ directly, through increase in food supply; indirectly, by injuring their enemies.

(7) Since malaria may be latent and hence unrecognized, and since it is largely a disease of the lower classes whose movements it is difficult to control, the best method of reaching it is to suppress the mosquitoes whenever possible.

(8) Malaria is of sufficient importance to become a notifiable disease.

(9) Infants and children exposed should have their blood examined during any disturbance of health.

(10) In times of epidemic malaria it may become necessary to make special regulations governing infected persons.

(11) It is of great importance that the relation of the widely distributed species, *A. punctipennis*, to the parasite of tertian fever be accurately determined.

(12) It is also highly desirable to test the infecting power of fresh cases of tertian fever as compared with relapses and with individuals from malarial countries.

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Original Articles.

THE ELEMENT OF TORSION IN LATERAL CURVATURE OF THE SPINE: ITS PLACE IN THE CAUSE AND TREATMENT.[1]

(Third Paper.)

BY ROBERT W. LOVETT, M.D., BOSTON.

IN spite of the present activity in orthopedic literature on the subject of rotary lateral curvature of the spine, our present knowledge of the mechanics of the affection is very inexact, and treatment for this reason is necessarily largely empirical. The explanations of the phenomena of scoliosis and the study of its mechanism have been written from a study of the especial structure of the human spine, particularly the distorted scoliotic spine. The curves of the articular processes have been studied, the shape of the individual vertebræ has been analyzed, the physiological curves have been considered, and a large amount of work has been expended [2] upon this side of the question. This literature occupies a large space, but has proved of little practical value.

The present paper is an attempt to study the element of torsion in its relation to lateral curvature, a study not of the anatomy but of the movements of the spine.

The anatomical work was done at the Harvard Medical School, and the writer is indebted to Prof. Thomas Dwight of the Harvard Medical School for his anatomical material and for the benefit of his criticism, to Prof. I. N. Hollis of Harvard College for help on the mechanics of the problem and to Dr. H. O. Feiss of Cleveland for much help in the experimental part of the work.

If one considers the human spine from the point of view of its evolution, one finds that the spinal column in its simplest form (Cyclostomata) consists of a homogeneous non-segmented flexible rod. The articular processes first appear in some of the fishes (Rays and Teleostei), and are general in the Amphibia (Gegenbauer).

The spinal column in the lower fishes is a simple flexible rod consisting of a series of disc-like vertebræ bound together by intervertebræ elastic discs without articular processes. Higher in the vertebrate group one finds elaboration of structure and the formation of permanent anteroposterior ("physiological") curves, along with modifications of the shape of the vertebræ. But articular processes seem to have developed in the line of incidents rather than essentials, and in the higher forms have carried out rather than radically modified the behavior of the simple fish's backbone, which is in mechanical terms a straight, flexible rod.

Articular processes in the human spine from the point of view of their evolution are therefore to be regarded as the resultants of use rather than as factors determining of themselves the motions of the spine. They are the result rather than the cause of the behavior of the spine.

The questions at issue are these:

(1) Why does rotation of the spine on its vertical axis occur in lateral curvature?

(2) If lateral curvature is necessarily associated with rotation or torsion, may not the reverse be true, and may not rotation of the spine be necessarily accompanied by lateral curvature?

On theoretical grounds Meyer came to the conclusion, in 1865,[3] that the articular processes were not the cause of torsion, but that torsion was due to the fact that the human spine was composed of two elements, the column of bodies and the column of arches; and that as the two columns

[1] Read before the American Orthopedic Association at Washington, May 14, 1903.

[2] Riedinger. Morphologie und Mechanismus der Skoliose, Wiesbaden, 1901.

[3] Meyer: Virch. Archiv, 1865, Bd. 35.

possessed a different degree of elasticity, side bending must result in a torsion, since these two elements of the column did not respond in the same degree to side bendings. Since Meyer's view after long years of neglect has again come to the front,[4] it becomes of importance to examine the following aspects of the question:

(*a*) Do the articular processes determine or cause torsion of the spine?

(*b*) Is torsion caused by the fact that the spine consists of two elements of different elasticity?

(*c*) Does the spine as a whole behave as would a flexible rod of the same size and shape independently of the two factors mentioned above, and may not torsion be explained by this fact alone?

In order to determine whether the articular processes cause torsion, and whether the united action of the two components of the human spine, the bodies and the arches, is necessary to produce torsion of the human spine in side bending, the following experiment was made:

The column of vertebral bodies was removed from an adult cadaver by cutting the pedicles of each vertebra, and the column of vertebral bodies was observed by itself. In all respects it behaved as does the intact spine with ribs attached. Rotations and twistings followed the same formulæ as in the flexible rod and also the same formulæ as in the intact human spine. Even the lack of torsion movement in the lumbar spine, supposed to be due to the close interlocking of the articular processes, existed in the column of bodies, entirely independent of articular processes.

This demonstrated that neither the articular processes nor the different elasticity of the bodies and arches was necessary for the production of torsion in side bending, but that such torsion occurred in the column of vertebral bodies alone, and that the column of vertebral bodies alone did not differ in its behavior from that of the intact human spine.

Since then the whole spine behaves as would the column of bodies alone, and since the history of the spine in its evolution is that of a flexible rod increasing in complexity of structure, an investigation was then commenced to see if the spine in its movements did not behave as would any flexible rod of similar size, shape and elasticity. If such is the case, it would obey the laws of physics governing flexible rods, and as a passive instrument under certain conditions it must assume certain positions and could not assume others so long as its structure was intact, just as a carriage will go backward or forward or may be turned to the right or left but will not go up or down or sideways. It does not matter whether the carriage is pushed or pulled or goes of its own motive power, there are certain things that it can be made to do and others that it cannot be made to do so long as its structure and equilibrium are intact. And however much one carriage may differ in details from others, it is like every other so far as obeying certain general laws of physics. In the same way spines may be grouped together in obeying certain physical laws, however much they may differ in detail.

A flexible rod, as for example a quadrilateral rod of rubber, in bending or twisting follows certain definite mechanical laws, and these laws can be formulated in advance by any one familiar with mechanics. A straight flexible rod can be bent in one plane without twisting, but if such a rod originally curved in one plane be bent in another it must twist. It must always do this and can do nothing else. When the top is bent forward and to the right while the lower end is held, the front turns to the left and always to the left. A fixed combination of twisting and sidebending exists for every position. From a mechanical point of view a pure twist may be produced in a straight flexible rod without causing side displacement. There is a turning of each part of this rod in the horizontal plane, which is spoken of mechanically as *shear*, but no bending of the rod as a whole appears. But let this rod be bent already in the antero-posterior plane, and torsion of such a rod inevitably causes side displacement when viewed in the antero-posterior plane.

This was demonstrated by experiment in a quadrilateral rod of sponge rubber one inch square and eight inches long and in a quadrilateral rod of lead thirty inches long. In the latter series of experiments the lower end of the rod was fixed in a vise and the twist given by a monkey wrench at the free upper end. In both series of experiments a twist to the left was followed by one curve, and a twist to the right by the opposite curve. These results were constant in both series of experiments.

The following experiments were undertaken on the human spine:

The spine of an adult of about forty and the spine of the cadaver of a boy eighteen years old were observed. The pelvis was firmly fastened to a box and the cervical region twisted to the right and left by the hands and by a long brass rod fastened to the third dorsal vertebra. A lateral curve always accompanied the twisting, and occurred always to the left when the twisting was to the right and to the right when the twisting was to the left. The curve was to the same side and followed the same rules as that observed in the lead and rubber rods.

Observations were then made on the living model. The model was a woman of twenty-five, a professional model, who was very flexible. With the pelvis fixed, active or passive twisting with the chin to the left produced a marked lateral curve to the right, with side displacement of the body to the right. Twisting to the right produced the opposite curve. The curves were of the same character and followed the same rules as those observed in the lead and rubber rods and the spine of the cadaver. In twisting with the chin to the left the lateral curve begins at the dorso-lumbar junction and sweeps gradually out, returning in the cervical region to practically the median line. The lumbar region apparently

[4] Albert: Die Mechanismus der Skoliotischen. Wirbelsaüle, Wien, 1899; Riedinger: Morphologie und Mechanismus der Skoliose, Wiesbaden, 1901.



FIG. 1. — COMPOSITE PHOTOGRAPH OF CADAVER.

Straight and twisted to left. The white line is a strip of cotton cloth nailed to the spinous processes. The straight white line was before twisting; the curved white line to the right is the twisted portion.

takes little part in the lateral curve. It appeared at first as if there were a slight left lumbar curve accompanying this right dorsal curve, but careful observation and measurement on the cadaver and model showed that there was but little if any lumbar lateral curve. There is but little movement of torsion in the lumbar vertebræ normally, so that, in spines comparatively normal, it can be readily seen that any phenomena of torsion would be shown above rather than in this section of the spine.

Torsion may be carried to a much greater degree in both model and cadaver when the spine is erect than when it is fully flexed. In the erect position 90° of rotation of the top of the column was possible in both, while in the flexed position only 45° was allowed. When twisting is done in the position of full flexion of the spine, the lateral curve is located higher up than when it is done in the simple erect position, and its lower limit begins at about the seventh or eighth dorsal vertebra instead of at the dorso-lumbar junction.

The backbone of a fish and the backbone of a cat when placed in corresponding positions behave in the same way as the rubber and lead rods, the living model and the human spine, and lateral bendings and torsion preserve the same relations to each other.

The result then of these observations is as follows:

(1) An active or passive twist with the chin to the left in model and cadaver is accompanied by a dorsal curve to the right with displacement of the trunk to the right. In the erect position this lateral curve begins at the dorso-lumbar junction. In marked flexion the lateral curve begins at the seventh or eighth dorsal vertebra.

(2) An active or passive twist with the chin to the right is associated with a left lateral curve and a displacement of the body to the left.

It may be objected that this lateral curve is merely due to the fact that the whole thorax is twisted to one side and that the dorsal excurvation is thus seen from its side rather than from its posterior aspect, thus giving the appearance of a lateral curve where none exists. Observations on the bodies of the vertebræ in the cadaver twisted in this way showed, however, that there was a displacement of each vertebra on the one below it, making a real curve.



FIG. 2. — ILLUSTRATION FROM FORMER PAPER.

Model twisting to left.

Regarding the human spine, then, as a flexible rod already permanently curved in the antero-posterior plane by the three physiological curves, two propositions follow:

(*a*) It cannot as a whole or in any part be bent to the side without twisting, as demonstrated in a former paper.[5]

(*b*) It cannot be twisted or rotated without acquiring a side bending.

[5] Mechanics of Scoliosis, Orth. Trans., vol. xiii, p. 251.

It is desired to formulate the last-named phenomenon of twisting or torsion for two reasons:

(1) To analyze lateral curvature by means of it to see if certain cases do not begin as a twist rather than as a side bending.

(*b*) To utilize twisting movements and manipulations in the treatment of lateral curvature.

In the application of conclusions drawn from such general laws to the treatment of scoliosis, it may be very properly objected that such laws may not apply to the movements of a twisted and stiffened spine. On the other hand, it may be true that the laws governing flexible rods, if properly studied and adapted to the especial conditions existing in such patients, may apply with especial force and may be one lacking factor in the more satisfactory treatment of scoliosis. Experiment alone will determine the fact. In any event no theoretical knowledge gained from the study of a flexible rod can be considered as applying to the human spine without confirmation by experiment on the living model and cadaver. The least objection to the application of such general laws to a specific spinal distortion would be found in beginning scoliosis, the so-called postural cases, but even here experimentation would be required to establish the similarity of behavior.

The application of these facts to the study of scoliosis is of interest. Since every side bending of the spine is necessarily associated with some degree of torsion, one would expect to find that in all cases of lateral curvature of the spine, however slight, the shoulders had twisted in their relation to the pelvis and that a line connecting two corresponding points in the shoulders was no longer parallel to a similar line in the pelvis.

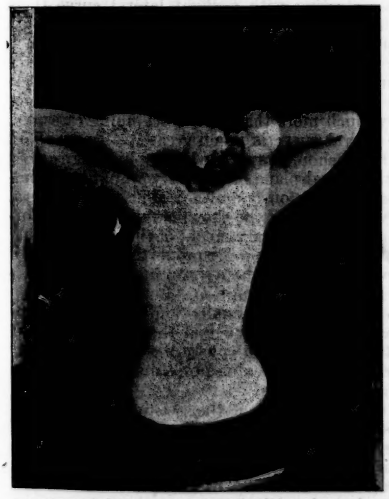


FIG. 3.—COMPOSITE PHOTOGRAPH OF MODEL. Twisting to left.

Looking down on a normal person in the erect position, the shoulders would not appear to be twisted with regard to the pelvis. In all cases of lateral curvature observed by the writer, such a twisting has been found. In cases of what appear to be at first sight purely lateral postural curves, beginning scoliosis of the kind where no rotation is supposed to exist, one will find on looking down on the patient standing at ease that the shoulders are noticeably twisted with regard to the pelvis and that one side of the shoulder girdle is carried forward and the other back. This is particularly noticeable in postural cases after they have been standing for a minute or two and muscular fatigue has commenced. Such patients if asked to bend forward until their trunk is horizontal (Adam's position) will appear to have no rotation or torsion present and it will also disappear in recumbency or suspension, but viewed from above in their natural standing position it is evident. It may also be demonstrated by placing long pieces of splint wood horizontally against the sacrum and the back of the chest above the spines of the scapulæ. This torsion is the inevitable outcome of every side yielding of the spine. But it is possible that the lateral curvature may have originated in a twist and that the side bending is secondary.

If a child holds the head naturally twisted, as is often the case, from some inequality in the vision of the two eyes or in the acuteness of hearing in the two ears, or from some similar cause, the spine will inevitably be twisted. Again, the contact of the condyles of the occiput and the articular surface of the atlas is generally best when the head is held otherwise than quite straight, which is an established anatomical fact. The twisted position of children at school in consequence of improper school furniture is another factor leading to the acquirement of a twisted position of the spine. These factors all tend to induce a twist of the spine, and a twist of the spine must in all cases be accompanied by a lateral deviation, to the right if the twist is to the left, and a curve to the left if the twist is to the right. This etiological factor has been left largely out of account in considering scoliosis.

Since the association of torsion and side bending of the spine is a constant one, as has been seen in the preceding experiments, it may be worth while to study scoliosis in terms of torsion. That is, to study the obliquity of the shoulders in a given case in the erect position to see whether the right or left shoulder is carried forward and knowing then the twist of the shoulder girdle with relation to the pelvis, to see with what lateral curve a right or left twist of the shoulder girdle is associated in the given case. In this way it is possible that some light may be shed on the origin of an individual case of scoliosis, and also possibly upon the general question of rotation.

In a former paper the following conclusions were reached by a series of experiments on the spine of the human cadaver and on the living model: [6]

[6] Lovett: Mechanics of Lateral Curvature. Boston Med. & Surg. Journ., June 14 1900.

"Lateral bending, then, in both cadaver and model in position of marked flexion is accompanied by torsion, and this torsion is in this position always in one direction, and is of the same type as the rotation seen in scoliosis; that is, backward on the convexity of the curve, or, in other language, the bodies of the vertebræ turn towards the convexity of the lateral curve. Various attempts were made to reverse this torsion while making side bendings in the flexed position by pulling the vertebræ apart, pressing them together, etc., but in all cases in both cadaver and model the type of torsion described above persisted." . . . "In the intact spine of the cadaver, therefore, and in the model, side bending in the extended position is accompanied by torsion of the vertebral bodies toward the concavity of the curve; in other words, the rotation is backward on the concavity of the curve, which is the reverse of the condition ordinarily seen in life in scoliosis."

Proceeding in the light of this to investigate scoliosis one finds that —

(1) A simple postural curve if acquired in the flexed position of the spine will show a twist which may be predicted in advance. In such a curve to the left the left shoulder will be carried back and the right forward because in such a curve the bodies of the vertebræ turn to the left as shown in a former paper.

(2) If it is a curve originating in the extended portion of the spine, that is, occurring in the lumbar region, the twist will be reversed, and the right shoulder will be carried back.

That cases of single postural curves commonly show a type of torsion that is the reverse of that seen in double curves has been noted clinically by Schulthess [7] and others (in one third of the cases of total scoliosis Jach. [8]) That is, in a left total curve the bodies of the vertebræ may turn to the right instead of toward the convexity of the lateral curve, which is to the left. This is explained by the existence of position (2) noted above. This in my experience seems to be the common type of torsion seen in the standing position in cases of total scoliosis of the postural type.

(3) If the curve originates in a twisting of the spine rather than a side bending the only twist that will cause a left curve is with the chin to the right and therefore the right shoulder is back.

In total left scoliosis, therefore, there are three conditions which make the shoulder girdle assume an obliquity with regard to the pelvis:

(1) A lateral curve to the left occurring in the flexed position of the spine with the left shoulder back.

(2) A lateral curve to the left occurring in the extended portion of the spine with the right shoulder back.

(3) A lateral curve to the left occurring as the result of a twisting of the spine with the face to the right, in which case the right shoulder is back.

Three reversed conditions exist, of course, for right total curves. If one takes these six conditions and rearranges them in terms of right or left shoulder back, one may construct the following table for the interpretation of simple total curves:

If the right shoulder is back it may be due to
(1) Right total curve acquired in flexion.
(2) Left total curve acquired in extension.
(3) Left total curve from twisting to the right.

If the left shoulder is back it may be due to
(1) Left total curve acquired in flexion.
(2) Right total curve acquired in extension.
(3) Right total curve from twisting to the left.

So far as the purely postural cases of lateral curvature are concerned, the twist of the shoulders should be easy to decipher when the relations of torsion and side bending are understood. But in the severer cases of scoliosis where there are two curves or even three curves, a new and confusing element, that of equilibrium or adjustment, comes in, which seems to have received little attention in the consideration of the mechanics of scoliosis. The element of equilibrium must modify the behavior of the spine, because in addition to being a flexible rod it must be considered a flexible rod with a sense of balance and equilibrium; not only is there continually an instinctive attempt when in the upright position to keep the head in the middle line of the body over the base of support, but to keep the shoulders parallel to the pelvis and the head looking approximately forward.

Were it not for this instinct of adjustment, one would expect that as the lateral curve increased the shoulders would twist more and more in their relation to the pelvis until in extreme cases of lateral curvature they might be twisted to an angle of forty-five degrees with the pelvis. Because starting with a slight lateral curve there would be a slight twist of the shoulders and with more lateral curve a greater twist — but such is not the case.

In cases of more advanced scoliosis the shoulders are also twisted in regard to the pelvis, but not very much more than in the beginning cases, yet the lateral curve is much greater. To go about with the shoulders twisted forty-five degrees out of the lateral plane of the body would be an impossible condition, and although in a slight lateral curve the twist of the shoulders might be proportionate to the lateral element of the curve, it could not increase in the proper proportion as the lateral curve increased without resulting in an impossible and disabling condition. Consequently somewhere between the shoulders and pelvis some compensation has occurred and the nature and seat of this compensation constitutes one of the most intricate and perplexing problems in the question of lateral curvature.

It would seem as if the twisting on a vertical axis shown in the prominence of the ribs on one side, known as the fixed rotation, in cases of scoliosis, were the result of this compensation. The shoulders must be kept roughly parallel to the pelvis and the head looking approximately straight ahead. To accomplish this parallelism of the

[7] Schulthess: Zeitsch. f. Orth. Chir., vol. vi, p. 399; Kirmisson: Rev. d. Orth., vol. vi; Hess: Zeitsch. f. Orth. Chir., vol. vi, p. 556.
[8] Zeitsch. f. Orth. Chir., 1892, 1.

shoulders and pelvis, compensating twists (rotation) must occur in both lumbar and dorsal region and they must be of an amount and character to keep so far as possible the top of the column pointing straight ahead. In the severe cases of right dorsal, left lumbar curve the left side will be prominent backward in the lumbar region, the right side backward in the lower dorsal region, but the axis of the shoulders again will be found backward on the left side. The instinctive sense of adjustment in keeping the atlas pointing in the same direction as the last lumbar vertebra is an important matter demanding compensating twists in a column which has once seriously curved to the side.

Rotation in severe lateral curvature, therefore, appears to be the result of the patient's instinctive effort to keep the shoulders square with the pelvis. A twist is necessitated by the beginning of every lateral curve, but this twist cannot carry the shoulder plane too far out of the pelvic plane. To get the shoulders back parallel to the pelvis a compensating twist must be added to the existing twist and the fixed rotation thus becomes the sum of the two. This is seen when one analyzes by the aid of the scheme furnished the condition where fixed rotation exists. The reading of the scoliosis in the light of the obliquity of the shoulders is not the same as in total curves of postural scoliosis, but apparently the reverse.

Fixed rotation is not, therefore, to be overcome by a simple untwisting, but must be regarded as a compound phenomenon induced by two twists, to be dealt with by local pressure in the usual way.

As to the therapeutic use of torsion of the whole spine, it is to be remembered that in the present treatment side bending and side pressure are practically the only unilateral or non-symmetrical movements used. Wullstein alone seems to have used torsion in forcible correction, but he has used it in connection with strong traction and as an accessory measure rather than to obtain its specific effect. Many complicated free standing movements involving torsion are used because they seem to place the spine in an improved position, but such movements when used are purely empirical and take but little account of the specific effect of torsion, which has never, so far as I know, been formulated or even studied from this point of view. Side bendings in the gymnastic treatment are of great value, but it must be remembered that side bending as such does not exist but always carries torsion with it. The trend of modern gymnastic treatment of late years has been toward laying more stress on symmetrical exercises and less on active side bendings.

The application of side force in the forcible correction of scoliosis has the theoretical and well-recognized objection that pressure must be communicated to the spine through the thorax. The ribs are movable at both ends and a certain amount of force must be expended on the ribs before acting upon the spine. Torsion, on the other hand, acts directly upon the vertebræ. Theoretically it has this point of advantage.

Torsion to the left with the spine erect causes, from the dorso-lumbar junction upward, a marked right dorsal curve and the trunk is carried to the right of the median plane. If the spine is flexed before being twisted the right dorsal curve begins higher up at the seventh or eighth dorsal vertebra and has the same character. Torsion to the right causes a left dorsal curve which may be distributed through the whole dorsal region or located in its upper half as may be desired.

Moreover, it is by no means clear that many so called postural cases of early lateral curvature do not have their origin in a twist of the whole spine rather than in a side bending, and that the apparent side bending is only the result of the twist. For such cases corrective twists would seem to be more rational treatment than corrective side bendings.

The therapeutic application of torsion is therefore plain. A right dorsal curve should twist or be twisted to the right, which should curve the spine to the left; should it be a high dorsal curve the twist should be given in full flexion of the spine. So far as the writer's experience goes, the therapeutic problem has been worked out only with regard to cases without fixed curves, where it has seemed to have a proper application and a distinctly good effect. With regard to cases with fixed curves it is not possible as yet to say what is its therapeutic value.

All that can be said at present is that torsion in the normal spine causes a distinct and uniform lateral curve. That postural cases of lateral curvature represent so slight a departure from the normal that rules governing the normal spine may be applied to them, as has been demonstrated experimentally. That postural lateral curves may apparently originate in (*a*) the flexed position of the spine; (*b*) in the extended position of the spine; (*c*) in twisted positions of the spine in which the lateral curve is only symptomatic of the twist. That in these cases torsion movements and passive torsions are of therapeutic value. And that in general the normal intact human spine behaves as would any flexible rod of similar curve, shape, and structure.

It is to be hoped that a further knowledge of torsion may enable us better to understand severe cases of scoliosis with fixed curves, and it is not unlikely that torsion movements and forced torsion may be of use in the correction of such cases.

A CRITICISM OF KLEMPERER'S WORK ON THE CONDITION OF URIC ACID IN THE URINE.[1]

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WHEN hydrochloric acid is added to urine the whole of the uric acid does not immediately precipitate. His[2] showed that that which remained dissolved is in the colloidal state, and that con-

[1] Read at the Boston Society of Medical Sciences, May, 1908.

[2] His, W.: Die Harnsäure Ablagerungen des Körpers und die Mittel zu ihrer Lösung. Therapie der Gegenwart. Neue Folge, iii, 434, 1901.

tinued shaking of the solution with the precipitated uric acid will remove it. This author showed further that formaldehyde combined with uric acid forms a compound which is not a salt, and that if urotropin be administered to a patient, it decomposes, giving formaldehyde, which is found in the urine combined with the uric acid.

Basing his assumptions on the work of His, Klemperer,[3] at the last congress for internal medicine at Wiesbaden, said that the uric acid is found in the urine in four forms:

(1) The chemically dissolved part. By this he means the pure uric acid in ordinary solution.

(2) The physically dissolved uric acid. By this he means that portion of the uric acid in solution in the form of a colloid.

(3) The uric acid combined with bases.

(4) The uric acid in the form of an organic compound with some such body as formaldehyde.

The chemically dissolved uric acid, as he admits, is very little, for uric acid is soluble only in 40,000 parts of water. The uric acid organically combined has been shown to exist only after administration of urotropin or chinotropin, so that this can usually be neglected.

Klemperer then undertook to determine the relative quantities of free urea and uric acid as a salt. He first determined the total amount of uric acid in 100 c.c. of urine by Ludwig-Salkowski method, and then shook another 100 c.c. of the solution with an excess of uric acid for forty-eight hours, filtered, and determined the uric acid in the filtrate by the Ludwig-Salkowski method. He says that shaking the urine with excess of uric acid precipitates the colloidal uric acid and that the filtrate contains therefore only the uric acid combined as salt. By subtracting the uric acid combined as salt from the total, he obtains the amount of free colloidal uric acid.

In the first place, His did not show, as Klemperer says, that a part of the uric acid in urine is in a colloidal state. His showed simply that when the uric acid in urine is set free from its salt by hydrochloric acid complete precipitation does not take place at once, owing to a retention of some of the uric acid for a short time as a colloid.

In the second place, Voit and Hofman,[4] Camerer,[5] Zerner,[6] Mordhorst[7] and Ritter[8] have shown that when urine cools from the body temperature to the room temperature a chemical reaction takes place. Sodium acid phosphate reacts with sodium acid urate to form alkaline sodium phosphate and free uric acid:

$$Na\,H_2Po_4 + Na\,C_5H_3N_4O_3 = Na_2HPO_4 + C_5H_4N_4O_3$$

That is, the relative quantities of uric acid and urate change as the temperature becomes lower. Klemperer's determinations of the relative quantities of free and combined uric acid at the room temperature therefore do not show what he tried to show, that is, the relative quantities at the body temperature.

In the third place, Pfeiffer[9] tried to show the relative quantities of free and combined uric acid in urine by pouring the urine repeatedly through a filter covered with uric acid. He assumed that the free uric acid was precipitated upon the filter and that the uric acid as urate passed through. Ritter[10] repeated and explained the results of Pfeiffer. He showed that the amount of uric acid remaining after passing the urine through the uric acid filter depends upon a number of facts, but chiefly upon the relative amounts of alkaline and acid sodium phosphate present. Klemperer has simply repeated the work of Pfeiffer, using a slightly different technique to bring about his results, and therefore does not show the relative quantities of free and combined uric acid even at the temperature at which he carried out his determinations. From these experiments Klemperer concluded that a valuable part of the uric acid, usually, however, more than half, exists free and in the colloidal state in urine. Since the tendency of uric acid to become colloidal in pure water is but slight, he attempted to find what held the uric acid in a colloidal state in urine.

He carried out one experiment in which he found that the presence of urochrome, the coloring matter of urine, retarded somewhat the precipitation of uric acid from its salts by hydrochloric acid. From the result of this experiment the author concluded that urochrome is the agent which holds the uric acid in urine solution.

The precipitation of uric acid was retarded somewhat but not at all prevented by urochrome, so that if Klemperer's experiment is confirmed by other chemists we can conclude not that urochrome is the agent which holds uric acid in urine in solution, but that the slow precipitation of uric acid in Heinz' method of precipitation by hydrochloric acid may be due to the presence of urochrome.

A complete quantitative and generally applicable explanation of the behavior of uric acid when a urine cools cannot be given until more data are available. When urine cools from the body temperature to the room temperature the dissociation constants for the electrolytes present change. These constants, together with the

[3] Klemperer, G.: Untersuchungen über die Lösungsverhältnisse der Harnsäure im Harn. Verhandl. des 20th Kongress für innere Med., 1902, 219.

[4] Voit and Hofmann: Ueber das Zustandekommen der Harnsäuresedimente. Sitzungsber d. Kgl. Bayerischen Akad. d. Wissensch., i, 279, 1867.

[5] W. Camerer: Zur Lehre von Harnsäure und Gicht. Deutsche med. Woch., 17, No. 10, 356 (1891).

[6] T. Zerner: Ueber die chemischen Bedingungen für die Bildung von Harnsäuresedimenten. Wiener klin. Woch., 6, No. 15, 272, 1893.

[7] Mordhorst, C.: Die Entstehung und Auflösung der Harnsäureverbindungen ausserhalb und innerhalb des menschlichen Körpers. Zeitschr. f. klin. d. Medizin., 32, 95, 1897.

[8] A. Ritter: Uber die Bedingungen f. die Entstehung der Harnsäuresedimente; ein Beitrag zur Theorie der Gicht. Zeitschr. f. Biol., 35, 155, 1897.

[9] Pfeiffer,: E. Zur Aetiologie und Therapie der Gicht. Verhandl. des 8. Kongresses f. innere Med., 444, 1886; and E. Pfeiffer: Natur und Behandlung der Gicht. Verhandl. des VIII Kongresses f. innere Med., 166, 1889.

[10] Ritter, A.: Ueber die Bedingungen f. die Entstehung der Harnsäuresedimente; ein Beitrag zur Theorie der Gicht. Zeitschr. f. Biol., 35, 155, 1897.

amounts of the different electrolytes, determine the concentrations of the various ions. If the change in equilibrium on cooling brings about an increase in the concentration of hydrogen ions these must combine with the negative uric acid ions from the sodium acid urate to form undissociated uric acid, for His[11] has shown that in a saturated solution of uric acid only 10% is dissociated. On account of the very low solubility of uric acid any undissociated uric acid formed will crystallize out.

In order to predict from its chemical composition whether on cooling the concentration of the hydrogen ions in urine will increase we must know, in addition to what is already known, at least the solubility and dissociation of uric acid at the body temperature and the dissociation of alkaline and acid sodium phosphate in solutions of different strengths at the body temperature and at the room temperature. We hope to determine these data and study the subject in detail. It seems probable that except the sodium salts the other bodies in the urine have only a lesser influence on the precipitation of uric acid.

Medical Progress.

PROGRESS IN OTOLOGY.

BY PHILIP HAMMOND, M.D., BOSTON.

(Concluded from No. 5, page 129.)

MASTOID DISEASE.

DURING the year several writers, in speaking of the mastoid operation, point out that the great danger consists in allowing the case to be neglected, and delaying operation too long.

Bliss[33] states that acute mastoiditis is a dangerous condition, and owing to the irregularity of its symptoms in different cases the question as to when one should operate is often veiled in uncertainty. Certain indications, however, continuing for several days, may be relied upon as of value in guiding the surgeon to favor an opening of the cells: First, steady, persistent pain over the mastoid process in the region of the antrum; second, the existence of edema; third, the temperature of the patient. In operating we should always aim to secure free drainage of the antrum. Although mastoiditis will, in some instances, develop during the most carefully conducted treatment of an otitis media, its prevention is undoubtedly very often due to proper care of the affected middle ear. It is especially urged that all acute inflammatory conditions of the ear be given early and appropriate treatment as the only safe means of averting a train of complications which may end in the patient's death.

Among the observations regarding temperature in mastoiditis during the year are the following: The writer[34] placed on record certain cases showing that the absence of temperature was of absolutely no importance as an indication of the necessity for operation.

In a study of a hundred cases, Harris[6] found that after operation (1) a moderate amount of temperature is customary; (2) the cause of it has not yet been definitely determined; (3) without other symptoms it is devoid of significance, and should not be a source of anxiety.

Holt[35] reports a case in which, following the ablation of both mastoids, a young woman had remarkable variations of temperature, ranging from as high as 114° to 94. These extreme variations were noted at the same time in different parts of the body. It was the opinion of those who saw her that the condition was due to hysteria.

Goldstein[8] regards an infection of the ear during an attack of grippe as distinctly different from an ordinary acute catarrhal otitis media, in that the invasion of the ear and mastoid are practically simultaneous, and active treatment must be at once instituted to enable our patients to avoid mastoid complications. Stress is laid upon the importance of early and free incision of the drum membrane, and it is urged that conservatism be employed in cases where tenderness of the mastoid appears, as many of the symptoms of mastoiditis are accompaniments of influenza.

On the other hand, Dench[36] again asserts his belief that it is a most dangerous procedure to use the cold coil to abort the inflammation within the mastoid, on the ground that it masks symptoms and gives one a false sense of security. He tries it, however, in cases where he sees the patient from the very inception of the disease, combining with it free drainage of the tympanic cavity. At the end of forty-eight hours, if the case is not progressing toward recovery, operation is indicated.

Whiting[6] calls attention to the cells at the base of the zygoma, believing that they are the cause of many cases of recurrent mastoiditis, and advocating their removal in all operations in this vicinity. Dench agrees with him, going even to the extent of advocating the removal of all the pneumatic cells in the occiput.

Injuries to the facial in tympanic exenteration is considered by Randall,[37] who has carefully outlined the course of this most important structure. In actual work it is not difficult to locate, as we can nearly always find the oval window, and we know that the upper margin of this niche is formed by the prominent facial canal. It goes forward but a few millimeters from this spot before disappearing into the depths of the petrous bone. Backwards from the oval window the nerve curves downwards, leaving the bone at the stylo-mastoid foramen. It is harder to recognize the nerve as we approach it through

[11] W. His: Physikalische chemische Untersuchungen über das Verhalten der Harnsäure und ihrer Salze u. Lösungen. Zeitschr. f. physiologische Chemie, 31, 1, 1900–1901.
[33] Internat. Clinics, vol. iii, 1902.
[34] Am. Med., April 12, 1902.
[35] Journ. of Med. and Sci., May, 1902.
[36] N. Y. Eye and Ear Inf. Rep., January, 1902.
[37] Laryngoscope, June, 1902.

the mastoid, but even here there are unmistakable bony landmarks which should indicate its presence to us. There is always the polished bony prominence on the inner wall of the antrum, which marks the protuberance of the horizontal semi-circular canal and the downward curving portion of the facial. A careful description of the organs adjacent to the middle ear is also given by Schmitt [38] and Stein.[39]

In the after-treatment of the radical operation, Muehlen [40] closes the retro-auricular opening primarily. The posterior wall of the canal is slit, and the first packing of iodoform gauze remains for six days. Another tampon is then loosely introduced and allowed to remain for two or three days. Eight days are allowed for the flaps to grow into their new places. As soon as this is accomplished, all packings are omitted. Irrigations with warm water are then used daily. He claims to experience very little trouble from excessive granulations forming in this method of treatment.

A case of cholesteatome of the middle ear with loss of memory is recorded by Packard.[41] The patient was twenty-three years old, and had had chronic suppuration for twelve years. Complete relief followed mastoid operation.

THROMBOSIS OF THE LATERAL SINUS.

In an article reviewing the history of this operation, Dench [6] states that the thorough mastoid operation was not commonly performed until within the past ten years. At the time when it was customary to simply drill a small hole into the antrum, a perforation into the lateral sinus was looked upon as being almost necessarily fatal. Then, following the teachings of Schwartze and Gruening, more radical measures were adopted even in all acute operative cases, and practically all of the cellular structures of the mastoid were removed. As soon as surgeons became bold enough to do this, it was found that exposure or wounding of the lateral sinus became divested of the terror which it had formerly inspired, and affairs progressed so that from becoming an unwished-for accident, it was commonly done as a prophylactic measure.

Dench [42] most emphatically believes in early operation in all suspected cases, and states that he has operated on twenty-two cases, with but two deaths. One of these was from a septic pneumonia, and the other from a nephritis induced by the anesthetic. In only four of the cases was it necessary to ligate the internal jugular, and all of these recovered. He believes that prompt surgical interference of the most radical kind is the only safe course. Ligation is demanded only in those cases in which the clot cannot be wholly removed from the sinus, and where there is undoubtedly a certain amount of infected material left in the venous canal.

[38] Am. Journ. Med. Sci., April, 1903.
[39] Laryngoscope, December, 1902.
[40] Arch. of Otol., April, 1903.
[41] Med. News, March 8, 1902.
[42] Am. Journ. Med. Sci., May, 1902.

Lederman [43] reports a case in which, after operating and tying the internal jugular, there was a relapse, with reinfection of the vein. This was again operated upon, and the patient made a good recovery. Lederman believes that the diagnosis must be based mainly upon the appearance of pyemic symptoms accompanying an acute or chronic purulent disease of the middle ear. He considers the most prominent symptom to be the rigor accompanied by profuse perspiration. He places little reliance upon the cordlike sensation in the vein, and has not been able to detect it, but considers as of more importance the presence of tenderness along the anterior border of the sterno-mastoid muscle. Opening or tapping the sinus should be avoided if possible, as cases of infection with fatal results have been reported by Linser [44] and others.

OTHER INTRA-CRANIAL COMPLICATIONS.

The importance of thorough operation in cases of mastoiditis complicated with cerebral symptoms is shown by cases reported by Broca and Laurens,[45] and Massier.[46] Several surgeons and neurologists who saw Broca's case pronounced it one of cerebral abscess. There were frequent chills, paresis of an arm, some aphasia and disturbances of vision. Massier's case is equally striking. Complicating the otorrhea there was violent headache and complete paralysis of the left arm with loss of movement of both legs. Here also a diagnosis of abscess of the brain was made. The radical operation in both cases revealed a meningitis due to infection from the ear, and the result was a complete disappearance of the symptoms.

Lewis [47] reports a case of chronic suppuration in which a cessation of the discharge from the middle ear was followed by chills, sweating and a rise in temperature. There was partial facial paralysis and amnesic aphasia, but no other paralyses and no optic symptoms. At the operation the mastoid and middle ear were found to be filled with pus, and an extra-dural abscess was found beneath the squamous portion of the temporal bone. Gauze drainage was used, and the patient made a good recovery.

Jack [48] succeeded in saving a case of brain abscess following suppurative middle ear disease. The patient had had a discharge from the left ear for three years. There had been frontal headaches for six weeks, and there was tenderness of the mastoid. The mastoid was opened, and necrosed bone and pus removed. The lateral sinus was exposed for an inch, but as the dura was normal in color, and there was no bulging, it was not opened. The patient improved for a time, but on the eighth day passed into coma. The wound was opened up, the dura opened, and several ounces of pus and necrotic tissue removed. Good recovery.

[43] Laryngoscope, November, 1902.
[44] Beitrage z. Klinchirurgie, Bd. xxviii, H. 3.
[45] Ann. des malad. de l'oreille, du larynx, etc., January, 1902.
[46] Rev. heb. de laryng., d'otol., etc., June 25, 1902.
[47] Med. Rec., Mar. 15, 1902.
[48] Bost. Med. and Surg. Journ., Dec. 26, 1901.

Braunstein [49] suggests the extreme importance of lumbar puncture as a means of diagnosis in intra-cranial complications of otitis media. In a total of forty-eight patients he has made it sixty-seven times to establish an indication for operation by exclusion of diffuse purulent meningitis, or to establish an indication for omitting operative interference by proving the presence of the above form of meningitis. The fluid removed by lumbar puncture is turbid, or even purulent in inflammation involving the cerebrum, spine and meninges. This turbidity may be due to chemical changes, or to an increase of leucocytes and admixture of pus corpuscles and bacteria. In tubercular meningitis the fluid may be clear, although containing bacilli. In uncomplicated cerebral abscess the fluid is clear, but the amount increased in quantity.

CHRONIC CATARRH OF THE MIDDLE EAR.

After a thorough test of nearly all the new methods of treating this disease, Randolph has failed to find the agent which can be said to be pre-eminently satisfactory. He believes that catheterization is the most satisfactory of the mechanical methods. Although he does not believe in the value of internal medication in this disease, he admits that he has seen cases distinctly benefited by thiosinamin in half-grain doses three times a day. In larger doses it is apt to produce vertigo. It seems to be especially valuable in the treatment of tinnitus aurium. It is claimed for this drug that it causes absorption of cicatricial tissue. There is an increase in the amount of the white blood corpuscles while the drug is being taken.

Snow [6] states that local intra-nasal factors must be taken into account before embarking upon the treatment of catarrhal deafness, but the mistake is often made that they are the whole cause, and too much benefit is expected from the correction of abnormalities there. He points out that there are many general diseases underlying the deafness, and that, if unrecognized, these prevent the fullest returns from thorough operations upon the nose. Disturbances of the skin, liver, stomach and other organs give rise to inflammatory changes in the head membranes. Much of the trouble to which we are subject is due to coddling and living in overheated apartments.

In a consideration of this subject, Harris [6] concludes:

(1) That we have made very little progress in treating chronic catarrh of the ear.

(2) That our chief success to-day rests in our ability in setting aside the producing nasal catarrh.

(3) That tubal therapeutics and pneumo-massage are at the best too often of temporary benefit and in the hands of some even of decided harm.

(4) That all we can promise with safety is to check the deafness.

(5) And that prophylactic measures are of the greatest value, especially the removal of the ever-present adenoids.

Hopkins [50] advocates the use of super-heated compressed air in the treatment of chronic catarrhal otitis media, as does also Oaks.[51] The former has obtained gratifying results in cases not benefited by other forms of treatment. He believes, however, that as an exclusive form of treatment it is rarely of much value, but that it gives the best results when used in conjunction with the recognized forms of treatment. He ascribes its beneficial effects on the ossicular chain to the fact that the joints have a very superficial covering.

Watson [52] has administered bone marrow internally in the treatment of chronic aural catarrh, and he reports twenty cases in which this was tried. His theory is that bone marrow produces an internal secretion of vital importance to the economy, and that this substance is a prophylactic against the action of various bacteria.

Electrolysis of the Eustachian tube is mentioned by many writers, none of whom obtain the brilliant results at first reported by Duel.

Melzi [53] claims to have relieved various obstinate chronic cases by the passage of a rubber sound into the Eustachian tube. He considers this to be a measure at once simple of application and devoid of danger.

Blake [11] believes that the various forms of pneumatic massage apparatus have greatly increased the number of patients with tension anomalies of the sound transmitting mechanism, because of the fact that they can be easily applied and in many cases at first seem to aid the hearing. He considers that unduly forcible inflation of the middle ear may cause extensive trouble by stretching the drum membrane. He is inclined to favor exploratory tympanotomy in cases of chronic non-suppurative inflammation of the middle ear, when treatment does not ameliorate the condition.

Harris [54] thinks the prognosis rather poor in most cases of tinnitus aurium, yet the results of treatment are not so unfavorable as is commonly supposed. In some cases treatment is directed to the ear locally, in some to the Eustachian tube, and various operations around the turbinates apparently affect the continuance of the noise.

Pynchon [11] continues to advocate pneumatic massage for various affections of the ear. By means of a special electric pump which he has devised for the purpose, he claims to be able to overcome the objections to the use of the mechanical masseur, as he is able to regulate absolutely both the amplitude of vibration to be applied to the drum and the speed. As a result of his observations he concludes that slow vibrations (30 to 90) are generally best adapted to middle ear troubles; that more rapid vibrations

[49] Arch. f. Ohrenh., June, 1902.

[50] Annals of Otology, Rhinol., and Laryngol., February, 1902.
[51] Laryngoscope, September, 1902.
[52] Brit. Med. Journ., March 22, 1902.
[53] Arch. Internat. de Laryngol. d'Oto-Rhin., March-April, 1902.
[54] Laryngoscope, March, 1902.

(300 and over) have a more pronounced effect upon the labyrinthal nerves, and that improvement, of middle ear conditions will have a favorable effect on the labyrinth in those cases in which disease of both the middle ear and inner ear co-exist.

Randall [55] believes that no harm will result from a careful use of Seigle's otoscope with a rubber bulb or of massage with the finger tip, but does not think that this applies to the mechanical vibrators.

Schwabach [56] reports as a result of tests of the therapeutic value of vibratory massage of the drum head an improvement in only 4.9% of cases of sclerosis of the middle ear, and is not inclined to look upon it with favor.

A new form of massage has been suggested by Hamm,[57] who believes that the membranes can be softened by making the pressure stronger, at the same time lengthening its duration. This he accomplishes by seating the patient in a cabinet, in which he produces the requisite atmospheric conditions.

Bates [58] goes to the extent of advocating the removal of the posterior wall of the bony canal in intractable cases of chronic catarrhal deafness. He reports good results following this method, the main objection being the length of time required.

OTITIS MEDIA INSIDIOSA, OR STAPES FIXATION.

During the past few years improved methods of decalcifying, embedding and staining sections have materially advanced our knowledge relative to this most important disease of the ear.

The idea which prevailed for many years was that an interstitial inflammation of the mucous membrane of the tympanic cavity initiated the so-called sclerosis, which by extension involved the chain of ossicles and the oval and round windows. Clinically there was a high degree of deafness with open Eustachian tube and normal appearing drum. It was considered that the membranes closing the foramina were directly responsible for the deafness, by mechanically obstructing the sound conduction.

Hartz [6] points out that microscopic sections reveal the location of the trouble as due to hyperplasia of the bony elements of the capsule of the labyrinth. This osseous process may be located simultaneously in the cochlea and the ossicular chain, and may also extend to the semi-circular canals. Politzer suspected years ago that capsulitis labyrinthi often began at an early age, progressing slowly toward complete fixation of the stapes. Bony deposits are most noticeable in that part of the ear which has the greatest functional activity, namely, around the base plate of the stapes. As to treatment, Hartz advises internally such medicinal agents as will promote absorption, as iodine, mercury and phosphorus, but admits that the results are negative. Thyroid extract has apparently given good results in the early stages. Politzer strongly recommends large doses of potassium iodide. Mechanical treatment, as carried out by means of the various masseurs, apparently aids the patient temporarily, but carried to excess can only result in harmful stretching of the membrana tympani, as pointed out by Blake.[6] This stretching occurs in the upper posterior quadrant of the membrana, and gives rise not only to an increase in the deafness, but may also cause a most annoying tinnitus. Surgical measures, such as stapedectomy, are followed by temporary relief only.

LABYRINTH.

Involvement of the labyrinth following or during an attack of the mumps is one of the rarer complications of the disease, chiefly important because of its serious prognosis.

Texier [59] gives a *résumé* of the literature of the subject, stating that the onset is sudden, somewhat resembling Meniere's disease, and the deafness permanent. It may involve one or both ears. The lesion is thought to be in the labyrinth.

Félix [60] insists that we should carefully examine all cases of labyrinthine deafness for evidence of syphilis.

In syphilis of the labyrinth Dench [6] uses pilocarpine internally in conjunction with hypodermic injections of mercury. It may be necessary to give it for two or three weeks before its effect will be noticeable.

Bacon [6] calls attention to the fact that pilocarpine is a marked depressant, and great care must be exercised in its use.

Scheyr [23] reports the case of a patient with involvement of the labyrinth following the ingestion of salicylate of soda for rheumatism. On the sixth day she was taken with very intense headache, vertigo and tinnitus in both ears. Although the medicine was at once stopped, the vertigo was persistent. The drums showed nothing abnormal. Bone conduction on the left was completely lost. Treatment apparently produced no relief.

TREATMENT.

Gruening lays stress upon the point that the ability to inspect the drum membrane is the first requisite for the general practitioner in the treatment of ear diseases. Meierhof [61] also states that very few cases require major operations where the patient has had the benefit of early expert treatment.

Among the new drugs which have been used during the year is thiosinamin, which has been experimented with by Beck [37] as a solvent for cicatrices in the Eustachian tube and middle ear. It is stated by various authorities that

[55] Journ. A. M. A., Aug. 31, 1901.
[56] Arch. of Otol., August–October, 1901.
[57] München. med. Woch., Feb. 5, 1902.
[58] N. Y. Med. Journ., May 3, 1902.
[59] Rev. heb. de laryngol., d'otol., etc., November, 1902.
[60] Ann. des malad. de l'oreille, du larynx, etc., December, 1901.
[61] Arch. of Otol., February, 1902.

this drug has the property of producing a local reaction when injected into any portion of the body where there is poorly nourished tissue, especially cicatrices or old inflammatory structure. As used by Beck, a 15% solution of thiosinamin is prepared and injected between the scapulæ or into the arm subcutaneously, starting with ten drops once a week, in some cases twice a week. This dose is gradually increased until an ordinary hypodermic syringeful is used each time. This treatment is combined with ordinary local measures, and nasal obstructions and the general health of the patient carefully looked after. As the result of treatment in fourteen cases, he concludes, first, that the injection of thiosinamin without mechanical treatment did not improve the condition, except to relieve the tinnitus somewhat; second, that with the aid of electrolysis and injection of thiosinamin the simple bougie could be passed with much greater ease, and inflation was accomplished with greater facility after a short time than was experienced in cases where these were not used; third, that all the cases treated with thiosinamin and electrolysis improved in from two to eight months in all respects — hearing, tinnitus aurium, general condition, etc.; fourth, that before using the thiosinamin careful inquiry should be made for possible contraindications for its use, such as co-existing chronic tuberculosis, malignant tumors, scars which support the abdominal organs such as are formed after laparotomy, etc.

Richards [6] has for several years been using soluble bougies for the relief of earache in children. They contain carbolic acid, opium, cocaine and atropine, and are to be inserted into the external canal, where they become liquefied by the body temperature.

Lederman [62] reports that Argyrol has been found satisfactory in the treatment of granular conditions of the ear. It is used in solutions varying in strength from 5 to 50%, and no irritation was noticed even from the strong solutions.

Static electricity has been used in the treatment of tinnitus by Drs. Bayer and Penninckx.[63] They apply the blunt point of the metallic conductor to within about 1 or 2 cm. of the tympanic membrane. The production of sparks should be avoided. They state that they have never seen any harm come from the employment of the method.

Stoker [64] records four cases of deafness with tinnitus, which he treated by pumping into the Eustachian tube ozone, which he generated from the electric current by means of a Ruhmkoff coil. In all the cases there was improvement of both hearing and tinnitus.

In using Lucae's pressure probe König [63] dips the little cup on the end into melted paraffin. When used in this way the massage is less painful.

[62] Med. Rec., Nov. 22, 1902.
[63] Rev. heb. de laryngol., d'otol., etc., 1902, No. 34.
[64] Lancet, Nov. 1, 1902.

Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

TWENTY-FIFTH ANNUAL MEETING, WASHINGTON, D. C., MAY 12, 13 AND 14, 1903.

(Concluded from No. 5, page 132.)

SECOND DAY — (*concluded*).

DISEASES AND TREATMENT OF THE SPHENOIDAL CELLS, WITH REPORTS OF CASES.

DR. ROBERT C. MYLES of New York read this paper, first showing a number of special instruments for work on the sphenoidal and ethmoid cells. He called special attention to the frequent irregularities and anomalies of size and position of the sphenoid cells, and showed a very fine wet specimen of half the skull, with the spheno-palatine and internal carotid arteries injected, the former crossing the field of operation, the latter lying close against the very thin inner wall of the sinus. He considered disease of the sphenoid cells much more common than usually reported. He advised the removal of the posterior end of the middle turbinate, when necessary, as a diagnostic measure, and when diagnosis is made, advised making a free opening in the anterior-superior wall of the sinus, close to the septum.

OBSERVATIONS ON THE DIAGNOSIS OF NASAL SINUSITIS.

DR. WALTER J. FREEMAN of Philadelphia presented this paper. In regard to the maxillary antrum he referred to the frequent failure of trans-illumination as a test for disease of the antrum, and noted the fact that when only one antrum was affected it was usually on the narrower or more obstructed side of the nose. In cases of inflammations of the antrum, acute or chronic, he considered the presence of pus flowing over the upper surface of the posterior end of inferior turbinated bone as the most frequent and the most certain sign. Intermittent cacosmia was a frequent and valuable sign. If any of the molar or bicuspid teeth were capped, or were at all discolored, they should be very carefully examined.

The author claimed to be able to wash out the maxillary sinus, in most cases through the natural opening, and showed a slender, flexible hard rubber canula for the purpose.

In regard to the frontal sinus he mentioned the usual train of symptoms, but gave special weight to the appearance of pus in the upper angle of the vestibule, claiming that when persistent, this sign was practically pathognomonic.

As to ethmoid disease, the author expressed great scepticism as to the frequency of its occurrence and the number of cases reported, and thought that most of them were undiscovered cases of antrum, frontal or sphenoid suppuration. As to the sphenoid cells, the author seemed to think that excepting by process of exclusion or by opening the sinus by an external operation, a definite diagnosis was almost impossible.

DR. BRYAN of Washington, in discussion of the papers on sinus disease, spoke of the frequent anomalies occurring in all of the sinuses, and showed a specimen in which the sphenoidal sinus was very large and extended far down into the pteregoid process. He expressed disapproval of the maxillary route for operation on the sphenoid sinus.

DR. MAYER of New York claimed that it was very seldom that the antrum could be washed out through the natural opening, but that it must be punctured through the outer wall of inferior meatus, a very simple matter.

He thought that the maxillary antrum route to the sphenoid was the best one, and would be the operation of the future.

DR. KING of New Orleans considered the Caldwell-Luc operation the best for most cases of frontal sinus disease; objected to the Kuhnt operation on account of the great deformity resulting; reported two cases done by a combination of Kuhnt and Luc operations with good results, and called attention to the frequent temporary infra-orbital neuralgia following the Caldwell-Luc operation.

DR. GLEITSMANN of New York spoke of a case of secondary hemorrhage, and said that he used liquid vaseline to loosen up the packing in all cases, thereby, he thought, lessening the tendency to hemorrhage when the packing was removed. He also spoke of the distance to which an instrument must be passed into the nose to reach the sphenoid sinus. This he had found very variable, in some cases 3½ to 4 inches; in others 5½ to 5¾ inches.

DR. LUC, in closing, said that he had not found any great difficulty in working through the floor of the frontal sinus; that the object of the operation was the obliteration of the cavity of the sinus, and that often it was a choice between complete success in that respect and a considerable degree of deformity, and when necessary we must choose the latter. He had found that the uprising of the fatty tissue of the orbit through the wound in the floor of the sinus helped to obliterate the cavity and to reduce the deformity.

As to the drainage opening into the nose it must be large enough to allow the finger to go up through the nose into the cavity of the sinus.

COMPLETE REMOVAL OF LEFT VOCAL CORD FOR MALIGNANT DISEASE. PRESENTATION OF THE PATIENT.

DR. WALTER F. CHAPPELL of New York reported a case as above. The patient had a small malignant growth on anterior end of left cord, with marked infiltration of whole larynx. In October, 1901, the case was operated upon, with preliminary tracheotomy, thyrotomy and total removal of left vocal cord and immediately adjacent infiltrated tissue. There was good recovery and there has been no recurrence to date. The patient has a husky voice, but articulates plainly and without effort. The author urged early diagnosis and early radical operation.

DR. MYLES of New York spoke of the relative value of the clinical and the microscopical aspects of these cases, and said that in many cases of removal with no recurrence, where the microscopical findings have shown malignancy, he often felt inclined to doubt the results of the microscopical examination.

PERICHONDRITIS OF THE LARYNX FOLLOWING TYPHOID FEVER, WITH REPORT OF A CASE.

DR. EMIL MAYER of New York read this paper. He stated that laryngeal inflammations due to typhoid fever were not very rare, and said that they were frequently important and valuable as a diagnostic point, as they may occur very early in the course of the typhoid. Marked stenosis of the larynx, the author said, was very rare; the ulcerations, when present, were usually caused by the ordinary pyogenic bacteria, and very rarely by the typhoid bacillus itself.

His conclusions were that the best general plan of treatment was early tracheotomy, with subsequent dilatation and intubation.

DR. DELEVAN of New York said in discussion that the condition was a rare one, and in about 94% of the cases was fatal.

He felt that the general consensus of opinion was that dilatation was usually not successful and that the use of O'Dwyer's tubes was the only rational treatment. He urged the importance of thorough care and cleansing of the upper air passages in typhoid, to prevent if possible this sort of complication.

DR. SIMPSON of New York advised the introduction of the tubes, under ether, as in that case we could use a larger tube and could probably use O'Dwyer's tubes and not have to use the Schrotter tube.

(*a*) A CASE OF EARLY APPEARANCE OF PARALYSIS OF THE VOCAL CORDS, IN MEDIASTINAL TUMOR.
(*b*) A CASE OF SARCOMA OF THE NASO-PHARYNX.

DR. WILLIAM K. SIMPSON of New York reported these two cases.

In the first one the author followed the course of the case in detail for several months, noting particularly the progress of the paralysis of the cords, the aphonia and the cough, and ending in the death of the patient. He then noted the findings at the necropsy, these being a large cancerous mass involving the mediastinal glands, and completely filling the posterior mediastinum, carcinoma of the left lung, carcinoma of the retro-peritoneal glands and an acute lobar pneumonia.

He presented the case to put on record an instance of complete bilateral paralysis of the vocal cords, which is the rarest form of laryngeal paralysis; to emphasize the early appearance of laryngeal paralysis as an indication of intra-thoracic pressure, which is often observed in unilateral paralysis and often antedates any positive physical signs in the chest, and to note the difficulty in exactly defining the lesion in such cases, even when autopsy has shown it to be very extensive.

(*b*) In the case of sarcoma of the naso-pharynx, the patient was twenty-seven years of age; there was a large mass nearly filling the naso-pharynx, bleeding easily and looking like an ordinary adenoid growth, and giving no symptoms excepting moderate obstruction to nasal breathing and some trouble in one ear, which latter cleared up under local treatment, the patient for a time refusing operation upon the mass in the naso-pharynx.

Later he had frequent and copious nasal hemorrhages, and consented to operation. The mass was removed in January, 1903, by curette, under cocaine and adrenalin, with very little hemorrhage. There had been no recurrence to date, and the patient's general health was much improved.

DR. THEISEN of Albany reported a case with adductor paralysis and dyspnea, upon which he did a tracheotomy for the relief of the dyspnea. A radiograph was taken later, and from that and other symptoms the diagnosis of an aneurism was made. After death, at the autopsy, a large mass was found behind the trachea and pressing upon it, and both the recurrent laryngeal and pneumogastric nerves were involved in the mass.

NOTES ON CASES OF NASAL SARCOMA, WITH EXHIBITION OF PATHOLOGICAL SPECIMENS AND MICROPHOTOGRAPHS.

DR. J. PRICE-BROWN of Toronto presented this paper and gave notes of several cases of from one and one-half to eight years' standing without recurrence since operation. He advised removal of these growths in all cases, by snare if pedunculated, and by snare, electric or cold, and forceps and scissors when sessile, taking the mass out piecemeal and at many sittings if necessary rather than doing an open external operation, which caused much deformity.

He found the hemorrhage severe in all his cases, but fairly easily controlled by adrenalin and packing, and had had no secondary hemorrhage. He urged early diagnosis and operation, because then could operate more easily intranasally, and also of course would have less chance of recurrence.

DR. SHURLY of Detroit said that he did not yet feel hopeful of permanent good results in these cases. All that he had seen had recurred.

DR. CLARK of Boston also felt discouragement as to the final results. He thought that they should be kept under observation for a longer period before being reported as cured.

DR. HARRIS of New York said that the hope of a final cure was a misplaced hope so far. He said that the prognosis rested somewhat upon the locus of the growth: if on the septum and pedunculated, so that the operation could be intra-nasal, the prognosis was good; but if diffuse and in the ethmoid region, it was bad. In the latter location he thought that the external operation was better than intra-nasal attempts.

DR. MYLES of New York urged early and radical operation. He spoke of finding in dissections of normal cases a small cartilage, extending from the basilar process to the sphenoid bone, and suggested this as the possible starting point of these sarcomata. He had noted also that in any case of tumor of this region, with a microscropical verdict of sarcoma, if it could be tided over to thirty or thirty-five years of age, it usually atrophied and disappeared — possibly due to the atrophy of this cartilage.

DR. LELAND of Boston urged the importance of early operation, as most of these growths were fibrous and benign early in their history, becoming sarcomatous and malignant later.

DR. GLEITSMANN of New York agreed with the protests against too early reports of cases as cured, but still thought that such protests should not be allowed to discourage operating, for even if it does not cure, the operation will frequently prolong life for one or more years and give relief from pain, and should therefore be done.

ADDITIONAL NOTES UPON THE TREATMENT OF NASO-PHARYNGEAL FIBROMA.

DR. D. BRYSON DELEVAN of New York in this paper called attention to the high rate of mortality of the formidable methods of the older surgeons for the removal of these growths, and presented an extensive series of cases to prove the superiority of operation through the natural passages.

His statistics showed that the mortality rate of such preliminary operations as resections of the superior maxilla and of the nose and the like was very high, while removal through the natural passages by such methods as evulsion, or cold snare, or electrolysis, or galvano-cautery-snare, gave most brilliant results. A brief summary of 135 cases was as follows:

Fibroma	*Total Cases.*	*Cured.*	*Died.*	*Recovered.*
Preliminary Operation	27	16 (59.25%)	7 (25.9%)	4 (15.4%)
Evulsion or Snare thro' Natural Passages	41	39 (95%)	2 (5%)	0
Electrical Methods thro' Natural Passages	66	66 (100%)	0	0

He noted the excellent work done in this field by the late Dr. Rufus P. Lincoln and by Dr. E. Fletcher Ingals of Chicago. He felt that the older method by preliminary operation would soon become obsolete, and that the newer methods by intra-nasal route would be the only operations of the future.

A METHOD OF RAPID EXTIRPATION OF NASO-PHARYNGEAL FIBROMATA, WITH REPORT OF CASES.

DR. GORDON KING of New Orleans read this paper. He said that he had noticed that these growths continued to increase up to twenty-five or thirty years of age, and then generally atrophied. He had found that igni-puncture and x-rays and other methods of trying to make the tumor shrink up were unavailing, and he felt that radical and complete extirpation was the only satisfactory plan of treatment. The author noted three special difficulties in operating:

(1) That of getting at the tumor.
(2) Hemorrhage during operation.
(3) Suffocative pneumonia.

He examined the growth digitally, and if it was pedunculated the operation was a simple one, merely snare it off; if sessile, he then operated with the finger in the naso-pharynx as a guide, and cut out the mass with long, strong scissors passed through the nose. The hemorrhage, though troublesome and sometimes dangerous, was readily controlled by pressure, and once stopped did not tend to recur. He advised preliminary tracheotomy.

DR. MYLES of New York reported a case which involved several operations both intra-nasal and external with recurrence after each one, but which finally after the patient reached twenty-eight years of age disappeared spontaneously.

THE REMOVAL OF CICATRICIAL CONTRACTIONS OR OBSTRUCTIONS OF THE NOSE BY THE SUBCUTANEOUS PLASTIC METHOD.

DR. JOHN O. ROE of Rochester read this paper, and demonstrated several of the delicate operations by means of plates, and showed a number of special instruments.

After speaking at length of the usual causes and usual older methods of treatment, he said he had found the latter unsatisfactory in many cases. Then as showing his present method he said for anterior contractions of the external opening of the nostril he made a crescentic incision denuding the surface of the contracted or filled-in portion, leaving the skin attached at one end as a long flap, then after excising the mass in the angle of the nostril he used the flap to cover in the raw surface thus exposed, or as much of it as the flap could cover, leaving the small balance to granulate.

In many cases of internal "bands" he found it possible to dissect off the mucous membrane covering the upper surface of the band, and then after excising the mass of the band to cover the raw surface left with this flap of mucous membrane.

For collapsed alæ he recommended making two incisions into the lateral shield cartilage (on the inside of the nostril) at an angle with each other, excising the wedge of cartilage between them and then suturing the edges of the cartilage incision together, thus causing the cartilage to bulge outward and carry the ala with it and hold it there.

DR. MAYER of New York suggested the use of the cargile membrane after operations in the nose which leave a raw surface exposed.

(*a*) FACIAL NEURALGIA DUE TO DISEASE IN NOSE AND ANTRUM.

(*b*) IMMEDIATE TRACHEOTOMY FOR FOREIGN BODY, WITH COMMENTS ON THE CASE.

DR. WM. PEYRE PORCHER of Charleston, S. C., read this paper (*a*). He noted that in very few instances in medical literature had any connection been observed, claimed or proved between facial neuralgia and conditions in the nose. He claimed, however, that it is the rule rather than the exception in these cases that the neuralgia is a reflex neurosis due to pressure or inflammation in the nose or antrum, and he deprecated the many extensive operations on the nerve trunks and ganglia, and upon the teeth, when generally relief of the difficulty in the nose or antrum would cure the neuralgia.

Dr. Porcher then detailed several cases with the usual train of symptoms in which operations in the nose relieving pressure or obstruction stopped the neuralgia.

(*b*) He also reported an interesting case of foreign body in the larynx and trachea of a child eight months old, with immediate tracheotomy and recovery. The foreign body was a small green pine burr, which, after unavailing attempts to extract it from above, fell through into the trachea, from which it was extracted by tracheotomy.

DR. ROE of Rochester reported two cases of facial neuralgia cured, one by removal of a large spur from one nostril, the other by removing an irritating spicule or bone from the antrum.

Owing to lack of time and in two cases to the absence of the authors, the following papers were read by title only, but will appear in the published transactions of the association for the year:

(1) BONY CYST OF THE ANTRUM; REPORT OF A CASE, BY DR. CORNELIUS G. COAKLEY OF NEW YORK.
(2) REMOVAL OF NASO-PHARYNGEAL TUMOR; REPORT OF CASE, AND DESCRIPTION OF A NEW INSTRUMENT FOR THE OPERATION, BY DR. E. FLETCHER INGALS OF CHICAGO.
(3) A CASE OF GANGRENE OF THE TONSIL, BY DR. CHARLES W. RICHARDSON OF WASHINGTON.
(4) NASAL POLYPI. A STUDY OF 145 CASES, BY DR. J. PAYSON CLARK, OF BOSTON.
(5) CONGENITAL LARYNGEAL STRIDOR, BY DR. JAMES E. NEWCOMB, OF NEW YORK.
(6) A STUDY OF CERTAIN ACUTE INFLAMMATIONS AT THE BASE OF THE TONGUE, BY DR. ALEXANDER W. MACCOY OF PHILADELPHIA.
(7) MEDICAL TREATMENT OF ADENOIDS, BY DR. WILLIAM C. GLASGOW OF ST. LOUIS.

At the executive session of the association the following new members were elected:

To corresponding fellowship: A. Anodi, Budapesth; P. McBride, Edinburgh; Herbert Tilley, London.

To active fellowship: Thomas J. Harris, New York; Clement F. Theisen, Albany; Francis R. Packard, Philadelphia; W. Scott Renner, Buffalo; William Lincoln, Cleveland.

The following officers were elected for the ensuing year: President, J. H. Hartman, Philadelphia; vice-president, J. H. Lowman, Cleveland; second vice-president, W. P. Porcher, Charleston, S. C.; secretary and treasurer, James E. Newcomb, New York; librarian, J. H. Bryan, Washington; member of council, Jonathan Wright, Brooklyn.

The next meeting will be held at Atlantic City.

Recent Literature.

Syphilis in Dentistry. By L. BLAKE BALDWIN, M.D., Chicago Ill., Professor of Dermatology and Venereal Diseases, Post-Graduate Medical School, etc., etc., and EZRA READ LARNED, M.D., Chicago, Ill. Chicago: E. H. Colegrove. 1903.

This is a valuable book which sounds a note of warning and directs the attention of dentists to a danger which they have never sufficiently heeded, if they have not ignored it altogether. It calls attention to the frequency with which extra-genital infections occur. It gives directions for recognizing these, and calls attention to the differential diagnosis between syphilitic and non-infectious lesions of the mouth and adjacent parts. It cites a number of interesting cases and presents several excellent illustrations which should serve to arouse the vigilance of the dentist and enable him to detect this loathsome disease whenever its physical signs are present.

The Essentials of Histology, Descriptive and Practical. By E. A. SCHAFER, LL.D., F.R.S., Professor of Physiology in the University of Edinburgh; formerly Jodrell Professor of Physiology in University College, London. New (6th) edition, revised and enlarged. In one octavo volume of 426 pages, with 463 illustrations. Cloth, $3.00 net. Philadelphia and New York: Lea Brothers & Co.

Schäfer's excellent manual has been greatly improved in the present edition, which is far better printed than any of the five previous editions. The illustrations have greatly benefited by the better presswork, and the new figures which have been added are especially excellent. The paper used is thin and opaque, so that the volume remains thin, despite the increase of the number of pages to over 400. The text exhibits a careful revision, and is much improved, notably in the account of the central nervous system. The author's style is so clear, and he brings out so well the points which are important to medical students that the book has become, so to speak, a standard favorite. The chapter on the kidney is the only one which seems unsatisfactory — it needs to be worked over, and we think that figures of typical sections of the human kidney should be added. In the next edition we hope the author will include an account of the blood sinusoids, and of the development of lymphatics from veins. As a whole the present edition deserves a cordial welcome, and the volume may be recommended as a reference work which includes many facts not considered in most manuals of histology. C. S. M.

A System of Physiologic Therapeutics. Edited by SOLOMON SOLIS COHEN, A.M., M.D. Volume X, Pneumotherapy including Aërotherapy and Inhalation Methods and Therapy. By DR. PAUL LOUIS TISSIER. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

The tenth volume of this series on pneumotherapy has appeared in 479 pages, including a rather unusually complete index. We have from the first had words of commendation for this excellent series of volumes on rational therapeutics, and we see no reason to change our attitude in looking over this last volume. Certain changes have been made in the details of this volume, in giving, for example, more space to the history of the development of the subject under discussion and to the details of physiological experiments and postmortem studies. In part second in Inhalation Methods certain aspects of pharmacology are given considerable attention. This is perhaps the first departure from the strict intent of the series to devote itself wholly to physiological therapy, but is certainly justified by the needs of the subject under discussion. In connection with each of the methods discussed considerable attention is given to special therapeutics, a plan which possibly detracts from system but adds to practical usefulness. In general we would recommend this book as an adequate presentation of a subject little understood by the ordinary medical man.

The American Year-Book of Medicine and Surgery for 1903. A yearly Digest of Scientific Progress and Authoritative Opinions in all branches of Medicine and Surgery, drawn from journals, monographs and text-books of the leading American and foreign authors and investigators. Arranged, with critical editorial comments, by eminent American specialists, under the editorial charge of GEORGE M. GOULD, A.M., M.D. In two volumes. Volume I, including General Medicine. Octavo, 700 pages, fully illustrated; Volume II, General Surgery. Octavo, 670 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

This now well known and excellent year book appears this year, as for the last two years, in two volumes instead of one. One of these volumes is devoted to surgery, the other to medicine, and it is of interest to note that in the opinion of the compilers these general subjects are of so nearly equal importance that the volume on medicine is but twenty pages longer than that on surgery. Through the death of Dr. Charles H. Burnett the departments of otology and laryngology have been united under the editorship of Dr. D. Braden Kyle, a change which the editor, Dr. Gould, regards as a proper logical and clinical combination. The object of these books, as implied in their title, is to epitomize the more important work of the year under proper subheadings. This continues to be done by men eminently fitted for the work, which is a guarantee that the essential points of progress are brought out. We could wish that a further personal estimate of progress might be permitted space in the volumes. It would undoubtedly be of advantage to readers could a general summary with critical comment be made at the end of each of the sections. The binding and general appearance of the books are, as heretofore, wholly satisfactory.

THE BOSTON

Medical and Surgical Journal

THURSDAY, AUGUST 6, 1903.

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INVESTIGATIONS ON THE ACTION OF CHLOROFORM.

ON July 10, 1901, a special committee was appointed by the British Medical Association to investigate chloroform in its therapeutic uses. The ultimate aim of the research was to determine the minimum dose of chloroform capable of producing adequate anesthesia without endangering life. The practical importance of such an investigation, in view of the reputed danger from the use of chloroform as an anesthetic, especially in consideration of the suspicion with which ether is apparently regarded in Continental countries, is self-evident. The uncertainty of dosage, the varying methods employed in administering the anesthetic and the occasional fatal outcome of its use, together render such an investigation as that inaugurated by the British Medical Association most timely. The first report of the committee was published in the *British Medical Journal* for July 12, 1902, and a second report appears in the issue of July 18, 1903, the latter undertaken by Dr. C. S. Sherrington and Miss Sowton. An excellent editorial summary of the work done also appears in this issue of the *British Medical Journal*.

The task set the committee was primarily to determine what proportion of chloroform entered the blood and became stored in the tissues, how much left the body during expiration, and whether or not any of the specialized tissues showed selective power in retaining the drug. The question of personal idiosyncrasy was also naturally considered. A further practical step in the research was to determine whether the ordinary methods of administrating chloroform were trustworthy and safe. The general conclusion reached regarding this latter point is that it is absolutely necessary to regulate the dosage of chloroform, and that an apparatus is eminently desirable which will on the one hand permit the administration of a definite dose capable of providing anesthesia and on the other not endanger life. The committee has furthermore reached the conclusion that safety depends upon dosage, by which is meant the proper percentage mixed with air. Concentration has been shown to be fatal, even in small amount, whereas it is maintained that a vapor below 2% is wholly safe, and that in most patients as low as 1% will maintain anesthesia. In view of these facts it is suggested that it would be of importance to learn what the common percentage of chloroform is as given by the ordinary more or less inexact methods.

Having established this fact, a further step was to determine with scientific accuracy what the physical effects of various percentages were. This is the essential problem discussed in this last paper of Professor Sherrington and Miss Sowton. They worked with the isolated mammalian heart and reached certain conclusions of much theoretical and practical importance. They found, for example, that heart muscle takes up chloroform from fluid circulating in the coronary vessels and that its lethal effects vary according to the fluid used. In diluted blood, for example, the chloroform gives less effect than in saline solution. With the increase of chloroform in the circulating fluid, more is taken up by the heart muscle until finally toxic effects are manifest. With weaker doses an equilibrium appears to be established between the chloroform-containing fluid and the heart muscle, so that finally no further effect upon the muscle manifests itself, in spite of the continuance of the flow of the chloroform fluid. This in a measure controverts the idea that chloroform has a cumulative effect upon the heart. It was furthermore shown by these experiments that the ventricle is paralyzed in its action before the auricle when toxic doses are used. These effects and others, to which we have not space to allude, bring out clearly the extreme importance of restricting the dosage of chloroform to relatively weak percentages, and show that the size of the dose circulating in fluid through the heart is the important element rather than the length of time during which it circulates.

The final results of this important and too long-delayed research group themselves about dosage and cumulation. It has been shown that chloroform is fatal in certain doses, the limit of which is regarded as abut 2%. Higher concentrations should be looked upon as potentially dangerous since their tendency is, other things being equal, to paralyze the heart muscle. The prolongation of the anesthesia with a dilution under 2% is not to be regarded as dangerous, although naturally individual susceptibility must be taken into account, and, as usual, arguments drawn from animals cannot be forthwith and without modification applied to man. The *British Medical Journal* expresses the hope that as the results of this and other similar investigations on the action of chloroform a method will be found whereby the strength of the anesthetic may be so absolutely regulated according to the requirements of the individual case that danger will be practically eliminated. It is urged that the danger of administering chloroform consists in giving an overdose, and that all precautions must be taken to provide that definite percentages alone are administered.

It is not our purpose here to take up the old controversy regarding the relative value of chloroform and ether as general anesthetics. The success attending the use of ether in this country, and its practical freedom from the dangerous effects which are admittedly present in the use of chloroform, continue to excite our wonder that the Continental countries have been so slow in adopting its general use. At the same time it must naturally be admitted that chloroform, if not always, is frequently a most desirable means of anesthesia, and that any researches which tend to the minimizing of danger in its use must be most heartily welcomed. The theoretical and practical importance of this work undertaken by the British committee must be very far-reaching in its effect.

MUNICIPAL HOSPITAL FOR TUBERCULOSIS.

IN 1901 the sum of $150,000 was appropriated in the General Loan bill of Boston providing for a hospital for consumptives. Under an ordinance passed by both branches of the city council an institution was to be established to be under the supervision of a board of trustees similar in general character to the Boston City Hospital. The provision was made that no patient treated in this proposed institution should be allowed to pay. On this ground the ordinance was vetoed by Mayor Hart, although he was in favor of the general proposition. Mayor Collins, on assuming office, declined to consider the matter, on the ground that the amount of money appropriated was too small for the establishment of such an institution. The matter was then allowed to remain quiescent, and it is only within two weeks that the question has again been revived by an order introduced in the Common Council amending the ordinance, whereby permission is given to the Board of Health to establish a city hospital for consumptives. This has been passed by the Common Council, and on Monday of this week was also passed by the Board of Aldermen without opposition. The matter is, therefore, now before the mayor for his approval or veto.

It has long been evident that the Boston Board of Health has been hampered in its fight against tuberculosis on account of the fact that there was no suitable hospital to which persons who were on account of their disease a menace to the community could be sent, excepting the special departments for tuberculosis at the Tewksbury Almshouse and at the Long Island Hospital. Owing to the somewhat unjust laws regarding declaration of pauperism before persons may be treated in these institutions, it is natural that a very great predjudice should have existed against entering either of them. This naturally has hampered the Board of Health in enforcing the somewhat rigid laws which have recently been enacted in accordance with the modern theories of the contagiousness of tuberculosis. It is apparent either that the stigma of pauperism should be removed from patients entering the state or city institutions, or else that other provision should be made for their proper care. In view of these facts, it is altogether desirable and, in fact, is rapidly becoming imperative that the city should provide for this class of persons. It is to be understood that the proposed institution is for the treatment of chronic cases, which are not necessarily past improvement, but which nevertheless cannot be admitted to the Rutland or to the Sharon Sanitarium. In the opinion of those who are qualified to judge of the matter it is felt that, although the amount of $150,000 is small to effect marked amelioration in the present conditions, nevertheless it should serve as a means of demonstrating the future possibilities of relief which the further prosecution of the work will bring to pass. Certainly a hospital of one hundred beds would greatly relieve the immediate necessities which exist in the city at the present time.

PREVENTION OF TUBERCULOSIS.

THE New York Charities Committee on the Prevention of Tuberculosis has just issued a series of interesting charts, prepared under the supervision of Dr. H. M. Biggs, with explanatory data, which show something of the conditions relative to the disease on Manhattan Island and of the work accomplished by the Health Department, with the co-operation of the medical profession and various organizations, during the last twelve years, by means of which the death-rate from tuberculosis has been materially reduced. The reduction from 1886 to 1902 is from thirty-eight deaths per thousand inhabitants to twenty-two, and from 1889, when the department first took active measures along the lines now followed, from thirty-three deaths per thousand to twenty-two. In the last decade there is an indicated decline of nine points in the death-rate for Manhattan, as against a decline of six points for the United States at large. The following comments by Dr. Biggs, who has had exceptional opportunities for observation, are worthy of note: "On the charts comparing the death-rate for New York and for the country at large, I have no hesitation in saying that if our efforts are kept up and advances made which are in the line of development of preventive medicine, the time will come when New York City will be relatively more free from consumption than the country as a whole. I can say this because consumption is a disease which may be controlled absolutely, and it only depends on the efficacy of the measures taken to control it. It is, of course, impossible to predict the rate of decrease, because that depends entirely upon what advances are made. So it is impossible also to say that at any indicated time, or ever, consumption as a disease will be stamped out entirely; but this may be said, that there is no more reason for consumption in the community than there is for smallpox. The advances for the past fifteen years, and since the Health Department began its campaign, have been marked by a rapid decrease in the death-rate. This has probably been more rapid than will be the decrease in the next fifteen years, because such measures have to become more and more effective to produce the same degree of result when the general condition is improving all the time. A reduction of forty per cent would bring the death-rate very low indeed, but whether this is accomplished in the next fifteen years, or the next quarter of a century, will depend entirely on the support that the public gives to the measures that are taken in fighting tuberculosis." It is stated that at the present time fully eighty-five per cent of all cases of consumption in New York are reported to the Board of Health, and that the inspectors of the board visit all tenement-house cases unless the attending physician requests that no visits be made. The department also has power to enforce the removal of patients to hospitals if required.

BISHOP BRENT'S WORK IN THE PHILIPPINES.

WE have on various occasions commented upon the active medical work which has been inaugurated in Manila through the energy of Bishop C. H. Brent, not long since sent as a missionary bishop by the Episcopal Church to the Philippines. Bishop Brent has apparently from the first recognized the absolute necessity of providing more adequate medical care for the ignorant and often superstitious natives with whom he has been called upon to deal. Largely through his efforts a general hospital for Manila is soon to open its doors for the treatment of patients. In other ways also he has shown his conviction that very much may be done toward the spiritual enlightenment of the natives by a preliminary care of their physical needs and diseases. In a private communication he dwells upon the very great desirability that missionaries in the Philippines should have a medical and surgical education, and expresses with regret his own deficiency in that direction. Speaking of certain natives at a distance from Manila, and work which he has undertaken among them, he says: "C. feels as I do about the importance of medical work, and he is fairly well equipped to begin it. Later on a nurse and a doctor are going up. I asked Mr. P. to give me a ton of Ivory soap for that region, — cleanliness is the hither side of Godliness, I think! — and he did so without a moment's hesitation."

The dispensary in Manila has up to this time been a success. About 250 patients of the poorest classes are under treatment, and other dispensaries are on the point of being opened. In general it is evident, from Bishop Brent's letter as well as from other news that has reached us, that he and the church which he represents is doing an excellent work in attacking in so rational a way the difficult problems which are

presented. It is fortunate for all concerned that so far seeing a man has been chosen to pioneer this difficult work. We cannot doubt, if the material wants of the natives with whom he is brought into contact are provided for as well as modern medical science permits, that the deeper problems which lie behind physical conditions will be far easier of solution.

MEDICAL NOTES.

IN HONOR OF THE LATE MAJOR WALTER REED, M.D., U.S.A. — A meeting will be held at the Hotel Louisburg in Bar Harbor, Me., on the morning of Saturday, Aug. 15, 1903, at eleven o'clock, to confer with respect to a memorial in honor of the late Major Walter Reed, M.D., U.S.A., to whom the world is indebted for most important services in the investigation and the suppression of yellow fever. Several committees in different parts of the country have already been appointed, and the object of this conference is to secure unanimity of purpose and concerted action. Addresses may be expected from gentlemen who are well acquainted with all the facts.

DEATH OF PROF. EDMOND NOCARD. — It is reported that Prof. Edmond Nocard, well known as a bacteriologist and former associate of Pasteur, died in Paris August 2.

A NEW JOURNAL ON CANCER INVESTIGATION. — A new journal under the auspices of the German Cancer Investigation Committee is about to be published under the title *Zeitschrift für Krebsforchung*, to be devoted to the publication of articles on cancer and abstracts on the subject appearing in various languages. It is to be published by Gustav Fischer of Jena, under the editorship of Professor Hansemann of Berlin and Meyer of Jena.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Aug. 5, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 34, scarlatina 15, typhoid fever 29, measles 22, smallpox 0.

VANDERBILT WARD OF THE NEWPORT HOSPITAL. — On Aug. 1 the trustees of the Newport Hospital formally received from Mrs. Vanderbilt a ward erected on the hospital grounds as a memorial to her husband, the late Cornelius Vanderbilt. In addition to the gift of the building, it is said that a generous endowment for the conduct of the new ward has likewise been provided. The ward itself, which is said to have cost $250,000, is naturally equipped in the most modern possible fashion, and is to be used for the needy poor and for those who are able to pay but a nominal sum for treatment. The gifts of several members of the Vanderbilt family to this hospital are said to amount to upwards of $500,000.

EYESIGHT OF RAILROAD EMPLOYEES. — Examination of the eyesight of employees of the Boston & Albany Railroad has recently been undertaken, with the reported result that many of the older employees of the road have been superseded. Unjust as the rigid enforcement of this test may seem, it is nevertheless imperative, as shown by certain recent accidents, that employees whose duty it is to recognize signals should have absolutely no defects of vision. It is said that hereafter a semi-annual examination will be instituted.

MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH. — By the invitation of the Boston Health Department the Massachusetts Association of Boards of Health was entertained at Gallops Island, Boston Harbor, July 30, the attendance being about one hundred and fifty. Mr. William Lyman Underwood of the Massachusetts Institute of Technology discussed the question of mosquitoes and methods of extermination. Mr. B. R. Ricards of the Boston Board of Health laboratory epitomized certain experiments on the comparative values of disinfectants.

APPOINTMENT OF DR. THEODORE CHAMBERLAIN. — At a recent meeting of the executive council Governor Bates of Massachusetts appointed Dr. Theodore Chamberlain of Concord medical examiner for the sixth Middlesex district. Dr. Chamberlain was a graduate of Harvard College and of the medical department of Columbia University. His experience since his graduation in 1895 justifies his appointment to this post of responsibility.

NEW YORK.

MORTALITY STATISTICS. — The Bureau of Records of the Health Department has just issued its report for the first quarter of 1903. The mortality in the city during that time represented an annual death-rate of 19.74 against a death-rate of 20.52 in the corresponding quarter

of last year. The corrected death-rates, excluding non-residents and infants under one week old, were respectively 18.73 and 19.63. Comparing the mortality with the average number of deaths and the death-rates of the corresponding quarters for the preceding five years, it is found that the number of deaths for the first quarter of 1903 was 18,156, which, on an estimated population of 3,732,903, gave a death-rate of 19.74 per thousand, as against an average number of deaths for the preceding five years of 17,773, which, on an estimated population of 3,448,567, gave a death-rate of 20.92 per thousand, a lowering of 1.18 points. The death-rates of the following diseases are compared because of their prominence from a preventive standpoint and as influential factors in the production of mortality rates: Average death-rate, 1898–1902, diphtheria and croup, 0.72; measles, 0.28; scarlet fever, 0.32; typhoid fever, 0.11; pulmonary tuberculosis, 2.52; influenza, 0.38; pneumonia, 3.92; cancer, 0.64; Bright's disease, 1.69. Death-rate, 1903, diphtheria and croup, 0.65; measles, 0.13; scarlet fever, 0.23; typhoid fever, 0.13; pulmonary tuberculosis, 2.42; influenza, 0.33; pneumonia, 3.63; cancer, 0.75; Bright's disease, 1.77. All the infectious diseases, especially measles, thus show a decreased death-rate, with the exception of typhoid fever, which shows a slight increase. On the other hand, cancer and Bright's disease show a considerably increased rate, in line with the views of competent observers as to the increase of these two diseases within comparatively recent years. There were 2,013 more births and 725 more marriages reported than during the corresponding quarter of last year.

A DAILY MEDICAL JOURNAL. — The Medical Publishing Company of America, an organization composed exclusively of physicians, has acquired from the Medical Critic Publishing Company the monthly journal *The Medical Critic*. Dr. Albert Warren Ferris has been appointed editor in the place of Dr. Frederic R. Sturgis, who recently resigned, and the staff of associate editors will remain the same as before. Dr. M. W. Curran also continues as managing editor. Encouraged by the financial success of the monthly, which has secured a large amount of advertising, the new company announces that, beginning with the first of October, it will publish a daily, to be known as *The Daily Medical Journal*, "which will unite energy and enterprise with a conservative regard for the ethics which should govern our profession, as well as the absolute independence which has characterized the policy of *The Medical Critic*." The proposed daily will consist of six pages, each 12 x 15 inches, and made up of four columns, and it is stated that the necessary equipment to print one hundred thousand copies each day has already been purchased.

DEATHS FROM INFLUENZA. — The last monthly bulletin of the State Board of Health, reviewing the mortality of the last six months, devotes considerable attention to deaths from influenza as affected by age. The figures show that more deaths are ascribed to it in the first year of life than in the next twenty. With the exception of the susceptible age of infancy, however, the first decade, and, in fact, the first twenty years, seem to be almost immune to the effects of the disease, and the middle period of life, to the age of forty-five or fifty, is resistant to it, so far as the reported mortality is an indication. Only one fourth of the deaths occurred prior to the age of fifty, after which there is a marked increase in each decade, the greatest number falling between the ages of seventy and eighty. The months of December, January, February and March, during which influenza is prevalent, show a much larger mortality at seventy years of age and over than the remainder of the year. Except during the first year of life, there are considerably fewer deaths from the disease among males than females; this is the case in every decade, and the discrepancy is especially marked in old age.

NOTES FROM THE PHILIPPINES.

RELAXATION OF QUARANTINE DESIRED. — The natives of the Mariquina valley, through which flows the river from which the Manila water supply is drawn, have petitioned the health authorities for a relaxation of the quarantine that is being maintained over the river. It is urged by them that as there is no longer any cholera in the valley this restriction can be removed without danger. The Mariquina watershed was quarantined as soon as the first cases of cholera appeared here, and was maintained for some months by military guards and mounted patrols. When the epidemic abated the quarantine was relaxed; but a sharp recrudescence of the disease caused a second and even more stringent quarantine to be imposed, which is still maintained in all its rigidity. A zone has been established on both sides of the river from which the natives are

kept away by mounted patrols. This careful quarantine has been of the utmost value to the sanitation of Manila, since, although cholera foci are scattered all through the islands, only a few sporadic cases of the disease have occurred in Manila for the past four months, and these have occurred in new arrivals from the provinces or were apparently due to the use of food introduced from infected points. In view of the continued danger of cholera, particularly during the early part of the approaching rainy season, there is no chance that the Mariquina quarantine will be abandoned or relaxed to any great extent.

Report of Board of Health. — The report of the Board of Health for the month of January, just issued, gives the average annual death-rate for the city of Manila, per thousand, for the month, as 23.46 for all nationalities. The death-rate for the Filipinos was 29.15, foreigners, 9.00; Chinese, 7.18; Americans, 6.05. There were 635 deaths, of which 319 were under one year of age. The birth-rate, as based on reports received by the Board of Health, was 5.61, but it is admitted that the returns in this respect were incomplete. Of the total number of deaths, 328 occurred with medical attendance and 307 without medical attendance. There were four deaths from cholera and but one from plague during the month. The number of deaths from cholera reported from the provinces during the same period was 1,180. These deaths occurred in 1,662 cases, giving a mortality of 70.99%. There were 77 towns reporting cholera during the month. In Manila there were 13 deaths from malaria, 27 from beriberi, 61 from pulmonary tuberculosis and 236 from eclampsia and convulsions of children. The annual death-rate for the month was lower than for January, 1902, with a rate of 30.16, and lower than that January, 1901, in which the rate was 36.22. Excepting during the cholera epidemic an almost steady decrease of the city death-rate has been the result of sanitary control by the Americans, and further improvements may be expected as the situation is bettered by the present improved sanitary organization and facilities. A total of 179,992 sanitary inspections of houses was made during the month; 17,078 houses were cleaned, repaired or destroyed under the orders of the sanitary inspectors, and 16,067 houses were disinfected; 1,382 cesspools were cleaned, 12,892 yards cleaned and 72 yards repaved. A total of 15,340 vaccinations were performed during the month — there were no cases of smallpox. There were 7,143 sanitary inspections of boats and watercraft in the port of Manila. The leper census to date, for the entire islands, shows 3,307 cases of this disease known to the authorities.

Proposed New General Hospital. — The proposed new general hospital will probably be located in the district of Malate, on a piece of property owned by the city. The committee in charge has made a formal request for that site. The ground is comparatively high and of sufficient area to meet the needs of the hospital for many years. It will also be very close to the government laboratories, which will be called upon to make the necessary examinations and analyses. The tract is a valuable one, but the city has no immediate need for it. If the request is granted, it will remove the necessity of starting a subscription for the purchase of a site. The resolution of the government to erect the hospital buildings and provide for their maintenance pronounced in favor of a site in the district of Santa Mesa, but expressly stated that the decision in that respect was not final. The Malate site is closer to the center of the city and quite as well adapted otherwise for hospital purposes as that at Santa Mesa.

Miscellany.

INFANT MORTALITY IN BOMBAY.

In a paper read before the Bombay Medical and Physical Society upon Infant Mortality in Bombay, Dr. D. R. Bardi pointed out that in 1899 the infant mortality was 593 per 1,000 births, and 867.67 per 1,000 of population amongst children under one year. Comparisons show that matters are growing worse rather than improving. Twenty-two "tables" are given, and from an examination of those bearing upon the causes of death it is seen that debility is most potent under seven months, whilst respiratory and nervous diseases kill many more before two years of age. This is largely due to overcrowding, bad sanitation, poverty, ignorance and superstition. The remedies consist in the enforcement of sanitary measures, education in hygienic principles and the minimizing the ill-effects of the condition of the poor. The excellent results of the Vaccination Acts show the advantages of compulsory sanitary laws. Impure milk supply is another serious menace to infant life, and suggestions are made that dispensaries should be attached and nurseries built where infants could be left in charge of nurses while their mothers were at work. By authoritative measures much of the infant mortality in Bombay could be prevented and the causes of its high percentage to a large extent removed. — *British Medical Journal.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 25, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Scarlet fever.
New York . .	3,785,156	1,220	535	39.43	7.60	2.46	23.03	.98
Chicago . . .	1,885,000	513	206	39.46	6.98	1.72	15.55	.97
Philadelphia	1,378,227	500	216	37.20	4.80	1.00	17.50	.40
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	220	100	40.45	5.45	.45	20.90	.91
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	142	81	38.02	7.75	2.81	19.00	—
Cincinnati . .	353,140	—	—	—	—	—	—	—
Milwaukee . .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	86	38	37.21	3.49	3.49	33.26	—
Boston . . .	603,163	188	58	37.43	5.32	2.13	17.55	—
Worcester . .	132,044	35	16	25.71	5.71	—	11.42	—
Fall River . .	115,549	59	34	61.02	1.69	—	44.07	1.69
Lowell . . .	101,959	36	20	47.21	2.78	—	44.88	—
Cambridge .	98,639	23	11	34.78	8.70	8.70	17.39	—
Lynn	72,497	18	7	16.67	—	5.55	—	—
Lawrence . .	69,766	32	13	46.87	12.50	—	34.37	—
Springfield .	69,389	21	7	23.81	4.76	4.76	9.52	4.76
Somerville .	68,110	10	1	30.00	10.00	—	—	—
New Bedford	67,198	32	17	50.00	3.12	—	40.62	3.12
Holyoke . . .	49,286	—	—	—	—	—	—	—
Brockton . .	44,873	11	4	27.27	—	—	—	—
Haverhill . .	42,104	9	1	22.22	—	11.11	11.11	—
Newton . . .	37,794	6	2	16.67	16.67	—	—	—
Salem	36,876	15	6	46.67	6.67	6.67	26.67	—
Malden . . .	36,286	13	3	—	15.40	—	—	—
Chelsea . . .	35,876	10	8	—	20.00	—	—	—
Fitchburg . .	35,069	—	—	—	—	—	—	—
Taunton . . .	33,656	17	10	23.53	11.76	5.88	17.64	—
Everett . . .	28,620	4	3	25.00	—	—	25.00	—
North Adams	27,862	13	4	16.67	—	—	—	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	3	—	33.33	—	—	33.33	—
Waltham . .	25,198	5	—	—	—	—	—	—
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,589	4	—	—	25.00	—	—	—
Chicopee . .	21,031	8	5	62.50	—	12.50	25.00	25.00
Medford . .	20,962	2	2	50.00	—	—	50.00	—
Northampton	19,883	5	1	—	—	—	—	—
Beverly . . .	15,302	2	—	—	—	—	—	—
Clinton . . .	15,161	4	1	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	7	0	42.90	14.30	—	—	—
Woburn . . .	14,300	—	—	—	—	—	—	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	1	—	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	2	1	—	—	—	—	—
Melrose . . .	13,600	—	—	—	—	—	—	—
Westfield . .	13,418	9	5	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	5	1	20.00	20.00	—	—	—
Framingham	12,324	2	—	50.00	—	50.00	—	—
Peabody . .	13,179	—	—	—	—	—	—	—
Gardner . . .	11,928	6	—	50.00	—	—	33.33	—
Weymouth .	11,344	4	0	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	2	1	—	—	—	—	—
Plymouth . .	10,780	—	—	—	—	—	—	—

Deaths reported, 3,302; under five years of age, 1,438; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,262, acute lung diseases 213, consumption 332, scarlet fever 26, whooping cough 31, cerebrospinal meningitis 10, smallpox 18, erysipelas 4, measles 29, typhoid fever 52, diarrheal diseases 689, diphtheria and croup 65.

From whooping cough, New York 3, Chicago 7, Philadelphia 12, Pittsburg 5, Boston 2, Lowell 1, Lawrence 1. From erysipelas, New York 1, Chicago 3. From smallpox, Chicago 1, Philadelphia 11, Pittsburg 6.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending July 11, the death-rate was 13.7. Deaths reported, 3,969; acute diseases of the respiratory organs (London) 127, whooping cough 90, diphtheria 47, measles 89, smallpox 5, scarlet fever 53.

The death-rate ranged from 5.3 in Smethwick to 26.0 in Wigan; London 13.3, West Ham 12.9, Brighton 8.3, Portsmouth 13.9, Southampton 9.9, Plymouth 9.3, Bristol 10.9, Birmingham 14.6, Leicester 13.3, Nottingham 13.8, Bolton 17.7, Manchester 15.4, Salford 14.3, Bradford 12.7, Leeds 13.3, Hull 14.6, Newcastle-on-Tyne 18.3, Cardiff 11.8, Rhondda 17.0, Liverpool 17.0, Hornsey 7.3, Merthyr Tydfil 19.6.

METEOROLOGICAL RECORD.

For the week ending July 25, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	We'th'r * 8.00 A.M.	We'th'r * 8.00 P.M.	Rainfall in inches.
S. . 19	29.66	60	61	59	100	100	100	N E	N	24	10	R.	R.	1.00
M. . 20	29.90	66	74	58	68	76	72	N W	S	2	9	O.	O.	T.
T. . 21	29.97	69	64	59	97	97	97	S E	N E	10	3	R.	R.	.34
W . 22	30.06	62	65	58	97	97	97	E	N E	7	8	O.	O.	.15
T. . 23	29.88	68	73	62	90	88	89	N W	S E	8	2	O.	O.	.26
F. . 24	29.95	73	82	64	75	44	60	N W	N W	12	9	C.	C.	O.
S. . 25	29.96	74	87	61	55	60	58	W	S W	10	17	C.	F.	O.
☞	29.91		72	60			82							1.65

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING AUG. 1, 1903.

M. H. SIMONS, medical director. Commissioned medical director from June 9, 1903.

DRS. S. L. SCOTT, T. N. PEASE and F. G. ABEKEN appointed assistant surgeons from July 10, 1903.

E. MAY, hospital steward. Appointed pharmacist from March 28, 1903.

T. N. PHILLIPS, hospital steward. Appointed pharmacist from June 8, 1903.

E. M. BLACKWELL and G. F. FREEMAN, passed assistant surgeons. Commissioned as such from June 7, 1903.

C. E. RYDER, assistant surgeon. Ordered to the Naval Hospital, Chelsea, Mass.

RECENT DEATHS.

GORTON HERBERT RACE, M.D., M.M.S.S., died in Great Barrington, July 22, 1903, aged fifty years.

LAWRENCE STEWART EDWARDS, M.D., of Patchogue, Long Island, N. Y., died on July 25, at the age of forty-eight years.

ALBERT JEREMIAH SCHUREMAN, M.D., of Newark, N. J., who was a descendant of a signer of the Declaration of Independence, died on July 29, at the age of seventy-four. One of his brothers, Dr. Charles A. Schureman, is a practising physician in Newark.

BOOKS AND PAMPHLETS RECEIVED.

A Pharmacological Study of an Aseptic Preparation of Ergot devised for Hypodermic and Internal Administration. By E. M. Houghton, Ph.C., M.D. Detroit, Mich. Reprint, 1903.

Three hundred and sixty-two Vaginal Hysterectomies for Cancer, with 28 absolute cures; and Collection of 263 other cures by 76 operators in the Mississippi valley. By Emory Lamphear, M.D., LL.D., of St. Louis, Mo. Reprint, 1902.

Sight and Hearing in Childhood. By Robert Brudenell Carter, F.R.C.S., and Arthur H. Cheatle, F.R.C.S. Illustrated London: The Scientific Press, Limited.

Plain Hints for Busy Mothers. By Marianna Wheeler. Illustrated. New York: E. B. Treat & Co. 1903.

A Manual of Obstetrics. By A. F. A. King, A.M., M.D. Ninth edition. Revised and Enlarged. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1903.

Diseases and Injuries of the Eye with Their Medical and Surgical Treatment. By George Lawson, F.R.C.S.(Eng.). Sixth Edition. Revised and in great measure re-written by Arnold Lawson, F.R.C.S. (Eng.). Illustrated. London: Smith, Elder & Co. 1903.

An Experimental Investigation of Trypanosoma Lewisi. By Edward Francis, M.D. Bulletin No. 11. U. S. Public Health and Marine Hospital Service. February, 1903.

A Statistical Study of the Intestinal Parasites of 500 White Male Patients at the U. S. Government Hospital for the Insane. By Philip E. Garrison, Braton H. Ramson and Earle C. Stevenson.

Original Articles.

THE PRESENT STATUS OF THE SURGERY OF THE PROSTATE GLAND.[1]

BY PAUL THORNDIKE, M.D., BOSTON.

THE reader has been asked to give a short *résumé* of the present condition of prostatic surgery. It becomes evident at once that to do this in the fifteen minutes' time allotted for the purpose makes a detailed account of technical procedures quite impossible, and little more can be attempted than to mention briefly the various steps which have brought prostatic surgery where it is to-day, and to consider with equal brevity the class of cases best adapted to each of the operative procedures which are in use at the present time. If this paper serves to help the practitioner of medicine to formulate and arrange his ideas as to the treatment of cases of obstructive enlargement of the prostate which are so common in every physician's practice, its object will have been attained.

Bottini performed his first cautery operation over thirty years ago and continued the use of his instrument up to the time of his very recent death, but the operation never gained an extensive repute until within the last few years. Belfield of Chicago performed the first prostatectomy in 1885, but it was not until the publication of a series of cases of prostatectomy, by McGill of Leeds in 1888, and the communication of Mr. McGill and his colleagues of the Leeds Infirmary, at the meeting of the British Medical Association in 1889, that the surgical world realized the practicability of a radical operation for the removal of obstructing prostatic masses.

Even during the last fifteen years hypertrophy of the prostate gland has been a condition to palliate and not to cure in the hands of most surgeons, and the men who have added radical operations upon the prostate to their list of routine procedures have been few indeed. How is all this changed! Almost every surgeon has done his few prostatectomies, and has his own ideas regarding the Bottini operation, even if he has not had actual experience in the performance of it. The surgical literature of the last two years amply demonstrates the fact that the surgery of the prostate is one of the burning topics of the moment and shows that the surgeon who contents himself with guiding all the patients who come to him for relief from this obstruction through years of more or less painful and dangerous catheter life, without offering them the relief which a prostatectomy or a galvano-cautery operation has to offer, is often indeed remiss in his duty.

In the earlier prostatectomies the organ was approached through a suprapubic incision into the bladder, and its removal was attempted piecemeal by instruments made for the purpose. The operation was a prolonged and bloody one, and no surgeon acquired large experience in its performance. Its mortality was something like 15%, and it was looked upon with enough dread by the profession at large to lead them to resort to a variety of other procedures of a less severe kind, all aiming at palliation without attempting the actual removal of the obstructing portions of the gland. Supra-pubic drainage, both temporary and permanent, incisions into and removals of portions of the gland through the urethra or through suprapubic or perineal incisions, castration, ligation of the vasa deferentia without castration, the galvano-cautery operation of Bottini and its modifications as instituted by Young of Baltimore and Chetwood of New York (the latter of whom performs the cauterization through a perineal incision with an instrument devised by himself), all will serve as examples of such procedures. Many of these palliative operations were so unsuccessful and others were so uncertain in their benefits that when it was realized that obstructing prostatic masses can be quickly and easily enucleated by the finger through a suprapubic incision, prostatectomy began to assume a real place in technical surgery, and a good many men acquired a considerable experience and skill with this suprapubic enucleation. In 1895 Nicoll of Glasgow, and in 1896 Alexander of New York, with a slightly different technique, demonstrated series of cases to show what Zuckerkandl in Vienna and Watson of Boston (1888) had pointed out as possible years before—that the prostate could be approached through a perineal incision. And as you all know, the perineal operation has become of late the one of choice in the minds of many surgeons. This fact has led to a very rapid improvement in the technique of the operation, an improvement which has been especially noticeable during the last year or two. Nicoll's perineal operation approached the prostate by a careful dissection between the urethra and rectum and opened the prostatic capsule from behind, thus making the operation a long and technically a difficult one. Alexander, while approaching the gland through a median perineal incision which opens the urethra but gives a quick and easy access to the organ, felt obliged to make a preliminary suprapubic cut into the bladder in order to push down the prostate from above into the perineal wound with a finger in the bladder. This involved two cuts instead of one, and the serious complication of opening the bladder, with the risks of suprapubic asepsis attendant upon that procedure. Guiteras endeavored to avoid this complication by making the suprapubic incision only into the prevesical space (and not into the bladder cavity), pushing down the prostate from there by introducing a finger between the bladder and symphysis pubis. At this time it became very evident that the future improvement in the technique of the perineal operation depended upon the omission of the suprapubic cut, and the accomplishment of the entire operation through the perineal incision. At the same time the difficulty of reaching the prostate

[1] Read before The Massachusetts Medical Society, June 9, 1903.

through a perineal wound without making large and extensive dissections became so apparent that various instruments were constructed to serve as tractors to pull down the prostate into the perineal wound, where it would be more easily accessible. Guiteras of New York devised an instrument of this kind, shaped a good deal like a sponge forceps with fenestrated blades, and designed to grasp the prostatic tissue through an opening in the prostatic capsule made for the purpose of enucleation through it. Syms of New York made an ingenious tractor of a different sort, which consisted of a rubber bulb on the end of a strong rubber tube. This bulb was passed into the bladder through the perineal wound and then inflated with air so that traction upon it served to bring the prostate down within easy reach. Ferguson of Chicago has devised retractors which he inserts into an incision into the posterior aspect of the prostatic capsule through a perineal wound, and so drags the prostate down within reach by traction upon its capsule and without passing any traction instrument into the bladder. Murphy of Chicago has devised similar tractors shaped like rakes; and finally Young of Baltimore has constructed what is perhaps the best of all these tractors, in the shape of a steel instrument with two fenestrated blades which can be readily inserted into the bladder and then opened out into a figure of eight behind the prostate. He thinks this instrument gives him firmer and better traction than he can get in any other way.

The last year or two, then, has demonstrated clearly the fact that the prostate can be readily approached through a perineal incision, and can be as readily brought within the reach of the surgeon without the necessity of a suprapubic incision. And now comes from Young of Baltimore the last development of the technique of the perineal operation. This consists in bringing the prostate well into reach and sight by traction made with his tractor just mentioned, and then removing the bulk of the obstructing glandular tissue through two lateral incisions in the prostatic capsule, leaving an intact urethra and also a narrow median zone of tissue just above the urethra, and containing the ducts from the seminal vesicles. So this operation aims to be a conservative procedure which leaves the generative powers of the individual unimpaired. This operation was described by Young at the last meeting of the American Association of Genito-Urinary Surgeons, held at Washington last May, but his paper has not yet been published. He has operated upon several cases recently and believes that he has succeeded in saving the generative apparatus unimpaired in a number of these cases.

During these years of the development of prostatectomy there have been always so many cases demanding relief which the catheter could not give, and yet cases which were obviously too infirm to be fit subjects for any severe surgical procedure such as is prostatectomy, that the need of other less severe and perhaps also less radical measures has been almost as great as ever. This need was accentuated by the fact that castration failed to give the permanent relief to such cases which was claimed and expected from it, and also proved, as clearly shown by Cabot in his report to the American Surgical Association, to be almost as dangerous as the more radical operations attacking the prostate itself. These conditions led many surgeons to turn back to the Bottini operation, which now for the first time is having a widespread trial. It is proving so satisfactory as a palliative operation, and its attendant risks are so much less than those which prostatectomy offers, that when it became certain that this operation can be performed when necessary without the aid of a general anesthetic, it was small wonder that it acquired so many adherents. The operation consists, as you know, in burning grooves through the obstructing portions of the prostate by means of a galvanocautery constructed for the purpose. It has always been claimed by the believers in prostatectomy that the Bottini operation is too uncertain in its results, and that it was often performed in the dark and for conditions of which too little accurate information could be obtained to be safe for general use; that if, on the one hand, the cauterizing blade be too superficially used, the results are bad, while if, on the other hand, they are made deeper, there is great danger of burning through into the periprostatic tissues and rectum. The reader has always shared these beliefs, and has never until recently employed this procedure; but when Young of Baltimore obviated this uncertainty of operation to a large extent by modifying the instrument in such a way as to provide different-sized blades for different-sized prostates, the accuracy of the operation was greatly increased; and now the reader believes firmly that with the knowledge which can be obtained by examination, and measurements with urethral instruments, by palpation (suprapubic and rectal) and by the cystoscope, which, when its use is feasible, will always give a fair idea of the conditions at the bladder outlet, the Bottini operation, as modified by Young's instrument, is sufficiently accurate to be safe in the hands of those familiar with its use; that it is applicable to perhaps a larger class of cases than any other single operative procedure; and that it can be performed without the use of an anesthetic other than cocaine should the necessities of the case require it. [Young's instrument shown.] The reader's own cases are too few in number to be worthy of tabulation, but they have encouraged him in his belief in the operation, and it is his hope to report before long a series of such cases to this society.

Now let us consider very briefly the class of cases in which these different procedures, both palliative and operative, are to be advocated:

Catheter. — The systematic use of the catheter has always been the chief means of palliating cases of prostatic obstruction. There are as

many, or more, cases to-day as ever when such palliation is possible and is to be advocated. Many of these go on throughout their lives in comparative comfort, and the danger from such a catheter life comes not during its proper continuance but through the hopeful efforts to continue it after its proper sphere of usefulness is past. Just at the moment when this becomes true, when, either through a lack of intelligence or a lack of proper surroundings on the part of the patient, or by reason of mechanical difficulties which prevent the easy and systematic use of the instrument such a catheter life becomes no longer easily feasible, then is the time for operative interference. The reader has operated in a few instances upon patients without advocating a catheter life at all, because in these individual cases, even though relief was sought early in the development of symptoms, the difficulties in the way of a proper catheter life were so manifest and so apparently insurmountable.

Prostatectomy. — A year ago the reader stated at a meeting in this hall that prostatectomy was *always* the choice for all cases which could no longer be palliated, and which were fair subjects for operation. This statement holds good to-day, and is based upon the fact that this operation is the only one which offers a cure for the condition with any considerable degree of certainty. It is, however, by no means proper to offer prostatectomy to all patients who have passed the stage of possible palliation, so long as other less dangerous expedients are at our command. Prostatectomy is an operation of considerable severity, and, when performed upon men past the prime of life, will always be attended with danger to life, no matter what improvements in its technique have taken or still may take place. Therefore, although its results are surest, it is adapted only to cases which are fair surgical risks, that is, to patients with fair heart and arteries, fair kidneys and a bladder which can be made clean and kept so. These conditions are not often present in patients over sixty to sixty-five years of age.

As to which operation shall be performed in cases where a prostatectomy has been decided upon this may be said: In spite of the great technical improvements which have lately been made in the perineal operation, improvements which have made the operation easier and more accurate of performance, and correspondingly less severe upon the patient, there is still a place for the suprapubic operation. This procedure offers and always will offer, as its great advantage, a visual inspection of the parts about to be attacked, which cannot be obtained in any other way. The cases especially adapted to its use are those of great enlargement, which involve the removal of enormous masses of glandular tissue. Such masses are always within easy reach of the enucleating finger, and their removal drops the bladder outlet, so that good drainage can usually be obtained through a catheter tied into the bladder through the urethra, and a perineal incision for drainage can usually be dispensed with. The disadvantages of the operation are a slightly longer convalescence, the possibility of sepsis in the suprapubic and prevesical tissues, and occasionally a tendency to hernial protrusion through the suprapubic scar. Up to the present time it has always proved a shorter, less severe and less dangerous operation in the reader's hands than the perineal operation; but the constantly improving technique of the latter and its ever-increasing ease and accuracy of performance will probably change all that. The perineal operation should probably be done in most cases when a good idea of the existing conditions to be attacked can be had prior to operation, and especially when a successful use of the cystoscope has rendered the intravesical conditions a known quantity. Now that the perineal route is developing conservative possibilities, and also is making the operation less traumatic and more accurate in character, it will become the operation of choice for most cases in the hands of the average surgeon.

The Bottini Operation stands proven beyond dispute a less dangerous procedure than prostatectomy, and as it can always be performed without a general anesthetic, and as it has a very short period of convalescence, the reasons for this fact can be readily understood. Its results, though not so certain as those of prostatectomy, are sufficiently good to gain for it a constantly increasing confidence, and the reader believes that this procedure should be offered to all cases which can no longer be made comfortable by palliative means and which are too infirm to make the risks of prostatectomy justifiable. Such cases will be found to compromise a very large percentage of all prostatics who present themselves to the surgeon for relief, and they are probably greater in number than any other one class of cases. The instrument as modified by Young unquestionably increases the accuracy of the cauterization and is, in the reader's belief, the best one to use.

Résumé. — To conclude, then, we may say:

(1) That no prostatic should be allowed to suffer for lack of proper treatment.

(2) That there is still a place for the catheter in such treatment, and that many patients can be made comfortable and can be kept so by its systematic and proper use.

(3) That all those patients who cannot be kept comfortable by palliative means are fit subjects for some operation.

(4) That the time for such an operation is just as soon as the inadequacy of palliative treatment is demonstrated.

(5) That the operation of choice is always prostatectomy, but that this operation can be properly offered to those patients only whose general conditions make them fair surgical risks, and that such is rarely the case after sixty to sixty-five years of age.

(6) That to all other patients the Bottini operation can be fairly offered as one attended

with little risk to life, a short convalescence, and a good prospect of such a degree of improvement as will at least do away with any further necessity for the systematic use of the catheter.

DISCUSSION.

DR. F. S. WATSON of Boston: I can add very little, I think, if anything, to what Dr. Thorndike has said. I want to join most heartily in commendation of Dr. Thorndike's paper. It seems to me that it very fully covers the ground and is admirably well balanced, and weighs the value of different proceedings in very just light. Practically all that I can do is to emphasize some few points already spoken of. The most essential point is that of the selection of the patients for whom the prostatic operations are desirable and of applying the method best suited to each individual case. There is no hard-and-fast line to be drawn in this respect according to the patient's age. The question turns upon the condition of the kidneys, and in this respect some men of seventy-five are quite as young as others of fifty-five.

We are better able to estimate the condition of the renal function, owing to the introduction of some of the recent methods, such as cryoscopy and the phloridzin test, etc., than we were formerly. But even without their aid, the renal capability of sustaining the shock of such operations as are the radical ones upon the prostate was sufficiently well shown by the usual methods of urinary analysis, and especially by one of its features which is peculiarly significant in these particular cases, — I mean the specific gravity of the urine. If this is found to be constantly low — 1012 or so — radical measures upon the prostate are fairly sure to be followed by serious or fatal consequences. The large majority of these patients die after operations of that sort from renal insufficiency, sepsis and other conditions playing but a relatively unimportant rôle in this respect.

But even in the absence of such danger signals all precautions should be taken against the occurrence of these fatal or alarming states in connection with operative procedures, and something may be done to avert them.

There is little that can be done with respect to guarding against the dangers arising from renal insufficiency. A suggestion made by Dr. MacGowan of California seems well worth following. He says that his dread of renal insufficiency in connection with operations upon the urinary organs has been greatly lessened owing to the employment of abundant subcutaneous injection of saline solution, which he employs as a routine measure at the beginning of every such operation, and which he credits with the power to avert subsequent failure of the renal function. Other than this and the usual precautions, such as guarding the patient from exposure to cold, etc., there is little to be done to ward off the danger from the defective renal action.

The risk from sepsis is very much less than from the other element just referred to, and more may be done to minimize it.

The most important thing to be done in this connection is, of course, to reduce — to cure is rarely possible — the cystitis if present beforehand, and to keep the bladder and operative field clean subsequently. The agents which I have found most useful for the former object have been urotropin, and for local application solutions of methylene blue and argyrol as bladder irrigations.

The most essential point in connection with these prostatic operations is the proper selection of the time at which to perform them. The longer my experience of these cases the more do I incline toward early operation, and the greater my disinclination to postpone surgical intervention until the use of the catheter has become inadequate.

When the latter point has been reached, the patient is already in a condition unfavorable for operation, and it will be performed in the face of dangers which, had it been done prior to this time, would not have been incurred, or at any rate, when they would have been very much less. In fact, the risk attending the performance of Bottini's operation in the early stages of this disease is very little indeed, and one which I am confident I shall incline to advise patients to assume more frequently, and at an earlier stage of the malady in the future, than has been my custom in the past.

My position as to the choice of methods is practically the same as expressed by Dr. Thorndike.

The performance of the perineal enucleation of the gland is, in cases in which it is appropriate, usually very easy. The essential factors in the rea ess with which it is done are fixation of the gland and the bringing of it as far down as possible on to the perineum. These may be secured by downward pressure from above the symphysis by the hand of an assistant upon the empty bladder, and by drawing it in the same direction by the tips of two fingers resting upon its upper border in the rectum, or probably better by means of such an instrument as that of Dr. Young, which Dr. Thorndike has just shown. I have not used the latter, and am therefore unable to speak more positively of it.

It is remarkable how easy the perineal operation may be in some cases — in one case I removed the whole gland in four minutes — and how difficult in others.

The choice of methods seems to me to be easily divided. In cases in which the cystoscope has shown it to be appropriate and adequate, the Bottini operation, though my personal experience with it is limited, is, upon the evidence in our possession, that of choice. In other cases the best plan to follow is, I believe, as I have frequently stated before, to open the perineal urethra by the usual incision, explore the condition of the gland with the finger, and then to remove it or its obstructing portions through the perineal incision when that is feasible, and

when it is not to proceed at once to the suprapubic operation.

One word with regard to the use of the cystoscope in these cases. It has one undoubted and great value, which is that it is capable of determining beforehand, as a rule, whether the case is appropriate for a Bottini operation or not, although it is possible to be misled even in this respect because of the inability to gauge the extent of the parts of the gland, and the degree of obstruction for which they may be responsible, which are not visible from within the bladder.

PRELIMINARY REPORT OF FIVE CASES OF RENAL DECAPSULATION.[1]

BY J. BAPST BLAKE, M.D., BOSTON,

Second Assistant Visiting Surgeon, Boston City Hospital.

THE following cases have been operated during the past nine months on the First Service of the Boston City Hospital. Three of them are reported through the courtesy of Drs. H. L. Burrell and J. C. Munro.

It has seemed advisable to record the progress in these five patients at this time, reserving a final and more complete statement for a period of about two years after operation. What might be called the immediate results and sequelæ are available now. The ultimate results, however, cannot yet be fully prognosticated.

Two of the five are, for the practical purposes of business and occupation, well. Two have died, at intervals of four days and six months after the operation. One is not relieved.

All of the cases were operated by two surgeons simultaneously, one decapsulating the right, the other the left kidney. The assistants have usually stood next the operator and not opposite him; with previous planning and a little practice, the members of this double team need not necessarily interfere materially with one another. The time of the double operation is thus reduced by nearly one half, and it does not appear that the patient is subjected to a noticeably increased amount of shock.

The patient has been placed prone, face downward, the head projecting beyond the end of the table, the shoulders protected (and slightly raised) by sheets, the neck being, of course, absolutely shielded from pressure. This seems to be best accomplished by having the etherizer support the head, placing a hand under the forehead. If large pads, thick sand bags or the wide rubber bag be used, care must be taken that the action of the diaphragm be not interfered with. If the bags are placed high in the epigastrium this result followed in several instances, and was made evident by cyanosis and even threatened collapse; these symptoms began to disappear almost immediately after the removal of the bags. If, on the other hand, the bags be placed too low, the angle between pelvis and thorax is not so well opened, and the kidneys may actually be displaced upwards. In a fat and edematous person, this may complicate the operation distinctly

The technique of the operation is simple and sufficiently well known to render a detailed description unnecessary. We have endeavored to preserve the lumbar nerves; arteries have been secured before opening the retro-peritoneal space. Occasionally one of the larger branches of a lumbar artery, cut and retracting into the muscle fibers, has caused an annoying hemorrhage. In thin patients it was sometimes possible to complete the operation without tying an artery. In fat and edematous patients the depth of the incision was surprising; and in such patients it was sometimes thought advisable to mark the outer edge of the erector spinæ muscle before operation, for it is at times difficult, in the presence of much edema, to accurately fix this outer margin when the patient is in position on the operating table. If the incision is too far out, the colon may bulge in the field; if too far in, the sheath of the erector spinæ may be opened, or the fibers of the quadratus lumborum encountered. It is better to avoid both of these things.

The lower pole of the kidney is usually reached easily, but at times it was difficult to bring the upper pole well up into the wound. Sterile tape slipped around and under this upper end, acting like a lasso, facilitates this part of the operation, and was, I believe, suggested by Dr. Arthur Cabot. The incisions have been closed either in layers or by the through and through silkworm gut sutures. In two incisions rubber dam or a bit of gauze was placed in the lower angle of the wound.

The actual decapsulation was usually done by splitting the capsule longitudinally with a scalpel and then peeling it off gently with forceps and fingers. In at least one case the capsule was found to consist of two distinct layers, and when the kidney had been apparently decapsulated, another complete layer was discovered and removed from it. This second layer would have escaped if attention had not been directly called to it. If it remained behind, at least part of the aim of the operation would have been lost.

As a rule the capsule separated without much difficulty. In contracted kidneys it is much more adherent, and occasionally carries with it morsels of the cortex. As it was separated it curled back towards the pelvis, and was removed with scissors. In one case where there was much difficulty in reaching the upper end of the kidney the capsule was simply pushed back over the upper pole, and left curled up beyond it. Small wedge-shaped bits of the cortex were taken at the operation from each case for pathological diagnosis. If there was persistent hemorrhage from the kidney wound it was closed by a carefully applied mattress suture of catgut.

In two cases patients were cyanotic and more or less collapsed on the table. As before stated

[1] Read at the Annual Meeting of the Suffolk District Medical Society, April 25, 1903.

this seemed to be due to interference with respiration produced by the large rubber air cushion. This cushion is better suited to the unilateral operation. These two cases did not, however, show signs of continued shock after the operation. In fact, with the exception of one case, the absence of post-operative shock was remarkable.

Two of the five cases complained simply of "soreness in the back" on the day after the operation.

The operation was always followed by a temporary diminution in the amount of urine, but this quickly disappeared, and within a few days the amount usually exceeded that passed before the operation. An increase of blood in the urine was always demonstrable by the microscope, and in one case the urine was mahogany colored for several days; in two cases the color was not changed, and in the others it was slightly high. One patient tore off the dressings and infected his wounds, which, as a result, granulated very slowly. There was a slight infection in the lower angle of one other incision. With these exceptions the wounds healed by first intention in from ten to fourteen days. There was not in any case a marked increase of pre-existing renal elements of the urinary sediment following the operation. As above stated, red corpuscles were invariably present afterwards, or if present before, were increased afterwards. But casts and cells did not show any material numerical change. It seems certain, therefore, that the so-called ether nephritis is largely a medical scarecrow; for if it were ever to appear, it would seem that pre-existing renal disease and actual operation on the kidney should favor its development.

The cases in detail are as follows:

CASE I. Male, forty-two years; cab-driver. Father and mother died of asthma. Patient has used alcohol to excess. Had gonorrhea fourteen years ago. For past five months increased nocturnal micturition, three to five times each night. Three weeks ago edema appeared, followed by anorexia, insomnia, epigastric pain, headache and diarrhea. He gave up work one week ago. Patient gave the above history on his first appearance at the Medical Out-Patient Department in June 1, 1902. He entered the medical ward on June 3. He was well developed and moderately fat; heart was negative, radial arteries sclerotic. A few moist râles were heard in the lungs, which were dull on percussion in the back, increasing to flatness at the bases. Free fluid was present in the abdominal cavity. There was marked edema of the legs, scrotum and penis, which later extended to the back, the abdominal parietes and the face. Temperature, normal; hemoglobin, 85%; leucocytes, 10,000; red cells, 5,470,000. The urine was smoky, neutral, 1,019, and contained ¼% albumen. The sediment consisted of some normal blood, fine granular and hyaline casts with many fat drops and fatty renal cells adherent, some fatty renal and compound granule cells, and triple phosphates. Urea was 1.82%.

On June 12, not having improved, he was seen in consultation and transferred to the surgical side. He was operated by Drs. Burrell and Blake two days later. Ether anesthesia. The operation was difficult on account of the edema of the back and the large amount of fat. Both kidneys were decapsulated. There was practically no post-operative shock. He began to feel better almost immediately. The edema began to diminish in ten days, and was entirely gone in six weeks. The urine increased in amount to 150 oz. The wounds healed by first intention, except at the lower angle on the left side, which became infected and granulated. He sat up after five weeks, and was discharged on Aug. 2, 1902. At that time the urine was smoky, 1,012, acid, and contained 1/10% albumen. In the sediment was an occasional cast with fat, a few renal cells, leucocytes and blood.

He gained strength steadily and resumed his occupation. Four months later his urine was pale, neutral, 1,004, and contained 1/12% albumen. The sediment was practically the same as in August. On April 25, 1903, the patient reports that he is feeling better than ever, is strong and active; he drives a cab; his appetite is excellent. There is neither pain nor discomfort at the site of operation. He looks very well, but still takes several drinks each day. The urine is pale, with a very slight smoky tinge, acid, 1,020, and contains about 1/10% albumen. Urea, 2%. Sediment slight, consisting of a few squamous cells. Some blood and fatty renal cells; a few leucocytes; a few hyaline, fine and coarse granular casts, some with degenerated renal epithelium adherent; a few calcic oxylate crystals. The diagnosis was chronic diffuse nephritis.

CASE II. Female, thirty-nine years; housewife. This patient had been in the City Hospital several times since 1894. She had been operated once for fistula in ano, which communicated with an ulceration of the rectum, and later was operated for a tubercular proctitis, which soon returned and persisted until her death. The urine in 1894 was normal color, acid, 1,026, no albumen, but contained pus in the sediment.

She entered the medical side in July, 1902, suffering from chilly sensations, fever, dyspnea, increased frequency of micturition and edema. The symptoms had been increasing for months and continued to increase in the hospital. She was seen in consultation and transferred to the surgical side. At that time her urine was pale, acid and contained ¼% albumen. The sediment contained pus, a few hyaline and fine granular casts, a little free fat, a few small round cells, fatty renal cells and red corpuscles. Examination for bacillus of tuberculosis was negative.

She was operated on Sept. 12, 1902, by Drs. Munro and Blake; ether anesthesia. The operation was less difficult than the previous case. There was considerable shock, pain and post-operative weakness. The pain seemed to be in *front* of the kidneys, and was accompanied by tenderness. There was no rise in pulse or temperature; the wounds healed by first intention, and she sat up in two weeks. The pathological diagnosis of specimens taken at the operation was "marked acute degenerative nephritis; slight amyloid degeneration of glomeruli; slight chronic nephritis."

After the operation the percentage of urea increased from 1.13% to 1.64%, but the actual amount diminished from 13.90 gm. to 12.60 gm. She grew stronger slowly, and was discharged on Oct. 6, 1902. The urine at that time was pale, acid, 1/10% albumen, the sediment containing a considerable quantity of pus, an occasional normal and abnormal red globule, small round cell, occasional hyaline and rare waxy cast. Two and one-half months later she reported that she had not improved much, save for a slight gain in strength and the disappearance of the edema. The urine contained ¼ to ½% albumen; considerable pus, hyaline and granular casts, many renal cells and some blood corpuscles. She died on March 18, 1903. I am indebted to Dr. W. B. Bancroft, her physician, for the following notes: She was up and about her home, doing light work, until two days before her death; she had occasional edema of the face; she developed a moderate cough; her pulse became poorer, her strength failed, and she died without unconsciousness nor uremic symptoms. One month before her death the urine contained ¼% albumen and much pus; no renal elements seen. The clinical diagnosis at death was "tuberculosis of apex of right lung; tubercular ulceration of rectum; tuberculosis of kidneys." The latter was justified, in spite of the negative findings in relation to the bacillus of tuberculosis in the urine.

CASE III. Male, thirty-one years; teamster. This patient entered the medical ward of the City Hospital

on July 1, 1902, having had edema, headache and dark-colored urine for several days. His family history was negative, his previous history good; he was moderately alcoholic. After two weeks he was seen in consultation, and operation was considered inexpedient. He improved very slightly and left the hospital in September. Almost immediately the edema returned, accompanied by pain in the back and increased frequency of micturition. He was admitted to the surgical side on Sept. 17, 1902. Heart, lungs and abdomen were negative; pulse was good. Urine was pale, acid, 1,013, albumen ¼%; the sediment contained numerous hyaline and fine granular casts of small diameter, with renal cells adherent; considerable blood free and on casts; some fat and many renal cells, occasionally fatty. The quantity varied from 40 to 60 oz. Urea, 14.52 gm. Operation Sept. 26, 1902. Drs. Munro and Blake; ether anesthesia. The urine was dark colored after the operation; the wounds healed by first intention; the edema was gone in two weeks; four days later he was up around the ward, and was discharged three weeks after the operation. At this time the urine was dark, acid, ¼% albumen; the sediment contained an occasional blood corpuscle and triple phosphates. One month later he reported that he was working hard and feeling well. The urine was pale, $\frac{1}{16}$% albumen; there was an occasional cast, hyaline and fine granular; considerable renal epithelium, some with fat adherent; occasional red corpuscle.

April 24, 1903, this patient reported again; he had done heavy work every night until three weeks ago; felt stronger than ever and could lift more. He then began drinking hard and continued to do so for two weeks. He stopped because edema of his face appeared; until that time his urine was clear and he was passing large quantities. While drinking, his urine became the color of Bock beer, but is now clearing. At this date (April 24) he looks well; he has slight edema of the ankles; his appetite is good and he has gained twenty pounds. The urine is smoky, acid, 1,005, albumen ¼ + %, urea .88%; the sediment contains considerable normal blood, a few leucocytes, some renal cells with fat adherent, an occasional compound granule cell and a very few hyaline and fine granular casts. The pathological diagnosis of bits of kidney taken at the operation was "chronic glomerulo-nephritis, so-called parenchymatous."

CASE IV. Male, twenty-six years; clerk. He entered the medical ward Jan. 13, 1903, having had for four days backache, edema of ankles and dark-colored urine. His family history was negative; he had suffered from malaise and indigestion for six months. There were râles over the entire chest; general edema, the heart being negative. Urine was high, acid, 1,029, albumen ¼%; sediment contained many casts, hyaline and fine granular, with small round cells, blood corpuscles, leucocytes and renal cells adherent; a little fat and a few abnormal red cells. His edema increased and he developed nausea without vomiting; he was seen in consultation and transferred to the surgical side on Jan. 30, 1903. He was then pale, thin, the pulse poor in volume and tension; lungs dull at the bases; abdomen containing free fluid; he had also an albuminuric retinitis.

Operation, Jan. 3, 1903, Drs. Burrell and Munro; ether anesthesia. He was very cyanotic during the operation, the pulse being barely perceptible at times. He made a poor recovery from ether; his urine did not change after the operation save for the appearance of some red corpuscles. On the second day he passed 14, on the third day, 20 oz.; he was conscious; he vomited for twelve hours on the third day, but stopped after being given spirits of chloroform; he then retained milk and lime water and enemata. He lost strength and sank gradually, however, and died, without signs of uremia, on Feb. 4, 1903. Pathological diagnosis of operation specimens was "subacute glomerular (amyloid) nephritis."

CASE V. Male, twenty-nine years, admitted to the medical ward Nov. 19, 1902. His family history was good; no previous disease; he denied venereal, but admitted twelve "schooners" of beer and two whiskies daily. Two weeks before entrance he developed chilly sensations, fever, slight cough, headache, nausea and vomiting; his urine was scanty and dark; edema appeared in the face, later in the hands, abdomen and legs; there was anorexia and some diarrhea; he had been in bed for three days. He was pale and fat; the heart was negative and there were râles at the bases of both lungs. The urine was smoky, acid, 1,026, albumen ⅛%; the sediment contained very many casts, hyaline and granular, with renal cells, fat drops and blood globules adherent; few squamous epthelium; neck of bladder, small round cells, leucocytes and red corpuscles. The white count varied from 8,000 to 12,000; urea from 2% to $\frac{1}{10}$%. The albumen ranged from ¼% to ½%, and the quantity of urine from 20 to 50 oz. He was a difficult patient to manage, refusing treatment at times. His condition did not improve; he was seen in consultation frequently, and was transferred to the surgical side on Jan. 24, 1903. At this time the urine was normal in color and about 50 oz.; otherwise practically unchanged since entrance. There was dullness in the back to the angles of the scapulæ; respiration and fremitus diminished; abdomen distended and containing free fluid; back and scrotum very edematous; albuminuric retinitis.

Operation Jan. 27, 1903, Drs. Burrell and Munro; ether anesthesia. The wounds were drained with rubber tissue on account of bleeding and free discharge of serum. He recovered well from the operation, but two hours later went into a moderate collapse, due to hemorrhage from the wounds; this was controlled by fresh dressings and a tighter swathe. For next two days he was very noisy and violent; he vomited frequently, and tore off his swathe; he then gradually improved. The amount of urine diminished and then increased, the sediment remaining unchanged; the edema gradually diminished. The wounds became infected as he continued to tear off the dressings from time to time. Five weeks after the operation he developed a broncho-pneumonia, which almost killed him, and which has left him with a cough and râles in his lungs. Later he was about the ward in a wheeled chair. On April 14 his urine was pale, acid, 1,020, albumen ¼%; urea 1.70%, 18.87 gm; sediment, many fatty granular renal cells, normal and abnormal blood globules; fine granular casts of large dimaeter, with epithelial cells, fat drops and blood adherent; a few hyaline, epithelial and fatty casts. His face was pallid, his appetite poor and his edema considerable. He was discharged to Tewksbury four days later. The pathological diagnosis of the operation specimens was "subacute glomerular nephritis."

Edebohls' recent article appeared in the *Medical Record*, March 28, 1903. In it he reports 51 cases, of which he has been able to trace all but 3. There were 47 operations on both kidneys, and 4 on one kidney only. Seven died within seventeen days after operation; 7 died in periods varying from two months to eight years; 2 do not show satisfactory improvement; 22 are in various stages of satisfactory improvement at periods varying between two and fifteen months after operation; the urine of several of these is free from albumen and casts. Nine patients were cured of chronic Bright's disease and remain cured at periods after operation varying from twenty-one months to ten years. Edebohls says: "To be classed as a cure, the following conditions must be fulfilled: the urine must remain free from albumen and casts, and the output of urea be normal, or approximately so, for a period of at least six months after the verification of the disappearance of albumen and casts, and the patient must be free from the symptoms of chronic Bright's disease from which he or she formerly suffered."

This is a sufficiently rigid standard of cure. Judged by it, none of the five cases here reported are cured; two of them are free from symptoms

and doing hard work as well or better than before their attacks; abstinence from alcohol on the part of these men might be followed by the disappearance of albumen and casts from the urine. Unfortunately, however, such abstinence is not likely to occur, and these two cases must be described as much relieved but not entirely well.

RUPTURE OF THE QUADRICEPS EXTENSOR FEMORIS MUSCLE.[1]

BY HALBERT G. STETSON, M.D., GREENFIELD, MASS.

IT occasionally happens that the country practitioner runs across something rare or at least unusual in a medical or surgical way — a condition which perhaps he recognizes, but for the description and relief of which he looks in vain in his limited library. He may, perhaps, find some mention of the particular condition with which he is called upon to deal, but for any real practical help or aid he may look in vain. His own library fails him because not sufficiently extensive and he is out of reach of the larger medical libraries of the city. He is then called upon to make use of his own talents and common sense, and his results will depend very largely upon his exercise of those qualifications.

Rupture of the quadriceps extensor femoris muscle is one of these unusual conditions. An accident at least not common, and many surgeons in large practice would, I believe, say rare. At least but little mention is made of the subject in modern textbooks of surgery, and many of them do not speak of it at all. Agnew, in his "Principles and Practice of Surgery," third edition, says he has meet with but two cases, and his experience, even at the time he wrote that, was a very extensive one. Connor, in Ashhurst's "System of Surgery," speaks in a general way rather briefly of rupture of muscles, but does not go into the details of rupture of any particular muscle or group of muscles. Dennis does not mention the subject at all. The "American Textbook of Surgery" speaks in a general way of muscular rupture, as does Da Costa. Wyeth in his textbook, and Monks in the "International Textbook of Surgery," allude particularly to rupture of the quadriceps and to its etiology, symptomatology and treatment. On the whole, the knowledge to be gained by the general practitioner from those textbooks most likely to be in his library would be rather small.

As I have said, rupture of the quadriceps extensor muscle is not a common condition. It is most often of traumatic origin. That is, the patient is going down stairs, or down a steep incline, looses his footing, and in his effort to save himself strongly contracts his quadriceps, which was previously very firmly contracted, with the result that it ruptures, or the patella is broken; and the determining factor may be comparative weakness of the muscle or tendon. Konig, quoted by Klein, describes two ways in which this rupture may be produced. Either the actively contracted quadriceps is suddenly strongly stretched, as when one descending a mountain slips and falls backward; or the passively stretched muscle undergoes an active contraction as when one falls over a step. The weight of the body presses the thigh against the leg, forming a very acute angle at the knee joint. The stretched quadriceps contracts to avoid overstretching, and a ruptured quadriceps tendon or fracture of the patella results. Cases of rupture of the quadriceps, as of other ruptures of the body, have occurred following typhoid fever and other prolonged pyrexias, from slight strain only, and without the knowledge of the patient; but of these I shall say nothing. Certain factors, however, have at times seemed to play a part in producing weakness of the muscle fiber, rendering the rupture easier than would seem to be normal. Alcoholism and arteriosclerosis would naturally be looked upon as such factors. Evidences of a diseased condition of the muscle itself have seldom been found. Maydl reports fatty degeneration of the muscle in one case. Hafeman found tabes dorsalis in two cases. Kohl and Wunsch saw cartilaginous bodies embedded in the tendon. Kohl found beside three solid masses in the tendon, also an analogous body free in the joint, and he considered the cause to be a chronic arthritis. Wunsch found a cartilaginous formation on both sides and diagnosed with probability an exostosis of the tendon. In a case reported by Vulpius there was very marked fatty degeneration of the tendon confirmed by microscopical examination; but these were only single and unusual cases. Most of the cases examined show no pathological or degenerate change whatever.

It seems to be most frequently met with in males. In ninety-eight cases collected by Walker, ninety-one were males and seven females. This great preponderance is no doubt due to the greater muscular activity of life followed by the male sex. It occurs slightly more frequently as age advances, the majority of the cases reported being over fifty years of age.

Concerning the location, there seem to be no factors which tend to make one limb any more liable to this rupture than the other. It seems to occur as frequently upon one side as upon the other. Cases have been reported where both muscles have been ruptured simultaneously; and both muscles have been ruptured separately, an interval of several months or several years intervening.

The point of rupture is most apt to be at the upper margin of the patella, although it often occurs higher up. In its relations, this muscle lies immediately over the joint cavity of the knee, and when the rupture occurs at the upper margin of the patella, the joint capsule is very apt to be opened. Walker says that the joint capsule extends upwards behind the rectus tendon for a distance of 5 cm.; and that rupture of the muscle at any point within this distance is very liable to involve the joint.

[1] Read before The Massachusetts Medical Society, June 9, 1903.

The occurrence of rupture is usually indicated by a sudden sharp, stinging pain, accompanied by a snapping sensation as of something giving way, and associated with complete loss of function if the rupture be complete; if not complete, if the lateral portions are still intact, or if a portion of the fascia is still intact, some power of extension will still remain. If seen soon after injury, the deformity is characteristic. The patient is unable to extend the leg, the upper edge of the patella is felt and is freely movable in every direction except upward; there is a marked depression above in which the condyles of the femur can be plainly felt. Above this depression is a tumor caused by the retracted muscle. There is but little pain usually, and only moderate tenderness. There may or may not be, coming on early or late, discoloration of the skin produced by extravasated blood. Extension and flexion of the leg to an angle of 45° cause little pain. Seen later, that is, from one to fourteen days after the injury, the gap so noticeable above the patella at the time of the traumatism has become filled in with extravasated blood and is much less noticeable.

The diagnosis should not be difficult in cases seen early. The loss of the power of extension of the leg, patella easily made out and movable in all directions except upward, a depression admitting one or more fingers above the patella; these objective symptoms, together with a history of muscular effort and the subjective symptoms of sudden pain and a sensation as if something had snapped, would, seemingly, make the diagnosis easy. McCosh believes, however, from a study of the reported histories of such cases, that in many of them the injury was overlooked because the examining physician was not alive to the possibility of such an accident.

And now comes the difficult problem of all to solve. How shall this injury be treated? Shall we rely upon mechanical means to bring about coaptation with the hope of a firm, fibrous union and a nearly functionally perfect leg? Or shall we invite the dangers attendant upon surgical manipulation of the knee joint, and cut down upon the ruptured muscle, bring the ends into opposition and stitch them with some suitable material?

Other things being equal, the operative method would seem to be the preferable method in the hands of the skilled surgeon and under favorable surroundings. Maydl, in fifty-six cases of complete rupture of the quadriceps, states the results in forty as follows: In twenty-four, or 60%, complete recovery followed; nine of the remainder acquired a useful leg; the other seven were unsatisfactory. Walker states that of twenty-three complete ruptures of the quadriceps in which he was able to give results, in sixteen, or 70%, complete recovery followed; in five a useful leg was obtained; and two cases were unsatisfactory. Compare this report with Walker's report of his operative cases—twenty-one cases so treated and nineteen, or 90%, complete recoveries.

Walker also compares the time occupied in bringing about complete recovery by the two methods. In speaking of his series of twenty-three cases of complete rupture, treated by the mechanical method, sixteen, or 70%, made a complete recovery. Of these sixteen cases, 18% recovered in three months, 31% in six months, and 50% in one year. Of his series of twenty-one cases treated by the operative method, nineteen, or 90%, made complete recovery. Of these nineteen cases, 56% recovered in three months and 100%, or the total number, recovered in six months, showing a large saving of time to the patient by the operative method in skilled hands.

Unfortunately, however, rupture of the quadriceps extensor muscle does not always occur in the young, strong, vigorous adult, the kind to whom you look for favorable operative results. I have before spoken of the fact that a large number of these cases occur after the age of fifty years. From that age on we look for degenerative changes — arteriosclerosis and its very common accompaniments, tense, wiry blood-vessels, cirrhotic kidneys, enlarged prostate, to say nothing of the greater liability supposedly of failure of union of the approximated ends.

Again, it is not always possible to bring about a meeting between the patient suffering from the injury under discussion and the skilled surgeon.

Under these circumstances it would seem to be perfectly proper treatment for the general practitioner to at least try the effect of the mechanical method of treatment. Many of us would certainly hesitate to molest the knee joint unnecessarily. McCosh, who cannot in any sense be accused of favoring the mechanical method of treatment, in his paper upon this subject advises against operative interference unless conditions are most favorable, believing that the non-operative plan of treatment should be tried, at least until more favorable conditions can be obtained. And he further says that a delay of several weeks does not contra-indicate the operation. I believe there is one danger from non-operative treatment which must be thought of, and which might become troublesome unless guarded against,— that is, inactivity atrophy of the quadriceps But early massage and passive motion would probably, to some extent, delay if not prevent this change.

All agree that in cases of partial rupture in which the lateral portions of the muscle are still intact, the mechanical treatment is all that is necessary. Most men, I believe, are in favor of mechanical treatment in cases where the distance between the divided ends is not more than one inch, and where the joint has not been opened. In those cases where the distance between the divided end is more than one inch, or where the joint has been opened, operation would seem to be the proper course to pursue; but even here the general condition of the patient would be a large factor in finally determining

upon the proper plan of treatment. And in those advanced in years and presenting the changes incident to age, even there the mechanical method of treatment might be thought advisable.

Particular care should be given to the application of the mechanical method. The patella should be pulled up as far as possible, and held in place by adhesive strips. The leg should be bandaged from the ankle to the patella, care being taken to have the bandage reinforce the plaster strip as far as possible. Beginning above at the upper portion of the thigh, bandage downward firmly, the object being to push down the retracted end of the muscle into nearer apposition with the patella. A long, posterior splint extending from the ankle to the gluteal fold should be applied and the leg strapped firmly to it. Cold applications to the knee if there is much extravasation of blood, foot elevated about six inches above the level of the pelvis. After five or six weeks, massage. After eight weeks, passive motion of joint and crutches. The time of recovery based upon reported cases should be expected in from three to twelve months.

The operative method consists in cutting down upon the separated ends and uniting them, either with silk-worm gut, catgut, kangaroo tendon or silver wire. If insufficient tendon remain attached to the patella, then drilling through the upper portion of the patella and attaching the upper fragment to the patella. Elevated position of the foot for two or three weeks, passive motion, etc., as with mechanical treatment.

Walker concludes his admirable paper with six conclusions, four of which would seem to be most useful suggestions for the general practitioner in deciding upon the proper method of treatment for this particular injury:

"First. In recent cases in which there is not much effusion, where the joint is apparently not opened, in which the separated ends can be approximated and retained by suitably adjusted pads, the mechanical treatment may be favorably considered. In the hands of an intelligent practitioner, this method may be expected to bring about a complete recovery in the larger number of cases. From nine to twelve months will be required to re-establish fully normal functions.

"Third. The skilled aseptic surgeon who promptly resorts to the operative method in suitable cases, though age and vitality of each patient must be most carefully considered, may quite reasonably hope to obtain a better result in the larger number of patients, and save his patient three to six months' time.

"Fifth. Where the separation is greater than one and a half inches, or where the case has not recovered under mechanical treatment, the operative is indicated.

"Sixth. As the length of time required for treatment is a very important consideration, so the operative method, which has diminished this period and also succeeded in a large number of cases without increasing the danger, will be more often indicated and more frequently applied in the hands of the skilled surgeon."

My attention was particularly called to this condition by the following case: S. B. S., retired, seventy-one, married, never ill. On Sept. 7, 1902, in going down stairs his slipper caught on the stair and he was thrown forward. He made a strong effort to save himself, and felt something give at his knee. Upon getting up he was unable to stand upon the leg, although the effort did not cause severe pain. The knee was "wobbly," as he expressed it, and uncertain; slight swelling occurred at once about the knee. Seen one-half hour after the injury. Left knee somewhat swollen; swelling not confined to the synovial cavity. Patella drawn downward about half an inch. Immediately above the patella is a depression allowing two fingers to be laid in; condyles of the femur plainly felt; above the depression is a moderate enlargement of apparently muscular tissue. Flexion, extension, latero-flexion, not accompanied by much discomfort. Patient can flex, abduct and adduct, but cannot extend the leg. Treatment, posterior splint applied, with a compress of lead and opium wash, moderately firm bandage. On the 8th the patient was seen in consultation by Drs. Twitchell and Zabriskie of Greenfield in reference to the advisability of adopting the operative plan of treatment. In view of the fact that the patient was the victim of some arteriosclerosis, and had for some time had some urinary retention due to an enlarged prostate, it was deemed best to try the mechanical treatment for a time, having in view the operative plan of treatment at some future time, if satisfactory results were not obtained by the mechanical. The patient was allowed up in a wheeled chair. The leg was kept in splints until the last of October, when massage and passive motion were begun. On Nov. 1 the patient was walking about with the posterior splint still on. Without the splint he can bend the knee and has some power of extension. Ordered continuance of passive motion. On the 28th of January, 1903, examination shows extension to be strong and forcible. Is able to kick vigorously; motion is good and unimpaired. As compared with the opposite leg, it would seem that he had from 75 to 80% of normal function. Patient says that he can see improvement still going on. Patient shows no lameness, climbs in and out of carriage easily and attends to his usual duties apparently as easily as before the accident.

DISCUSSION.

DR. S. J. MIXTER of Boston: I should be happy to say something on this very interesting paper, but the fact is I have never had a case of rupture of the quadriceps extensor; that is, a complete one or anything near complete. I have had par-

tial ruptures. I have seen several ruptures in the practice of other men. None of these have been operated on; they have been treated mechanically with good results. A distinguished member of the Massachusetts Medical Society had such an accident at the time I was a student. He was treated by Dr. Bigelow, and got a very good leg. I think I am correct in saying Dr. Bowditch had that accident by jumping from a horse-car. At that time, of course, operative procedures were not so common as now, and on account of his age, at any rate, it was best to follow a conservative line of treatment. He made an excellent recovery. Slight ruptures I have seen. It seems to me that ruptures of the quadriceps extensor tendon are very like fractures of the patella. In certain cases of fractured patella we get excellent results without operation. Those are cases in which the fascia is not widely torn, where the fragments are not separated. It is not the fracture of the patella so much as tearing of the fascia which causes trouble, and if we have only slight separation of fragments either of the patella, which is only a sesamoid bone in the course of the tendon, or the tendon itself, mechanical means will be able to give good functional results.

DR. H. WARREN WHITE of Roxbury: This paper is very interesting to me now just, after having taken care of a case similar in many ways. A man of seventy in going down steps thought there was another step. He made an attempted step and recovered himself, but felt, as he described it, as if he had "torn his pants." There was a giving way of something, he looked down and found he could not manipulate his leg, could not extend it at all. He was completely incapacitated, and brought home and treated with plaster-of-Paris bandages. But the curious part of our case was, that at the end of ten weeks, after removal of the plaster-of-Paris bandage and what appeared to be a complete and satisfactory result, and wearing an ordinary rubber bandage, he was in the stable attending to some duties when with a slippery floor under him his foot gave way suddenly and the same accident happened again, absolutely the same as far as the gap was concerned; perhaps not quite as extensive, that is, the gap was not quite so wide as at the first time, but there was the same inability to extend the leg. He is at the present time lying in bed with a plaster-of-Paris bandage on and we are hoping, of course, for as good a union as before. I had a consultation in this case and the same conclusion against operation was arrived at that Dr. Stetson speaks of. Our patient was old. He also had urinary trouble, and there was the slight arteriosclerosis of which he speaks, and signs of the same muscular weakening or degeneration which probably permits such an accident to occur in these cases.

THE chair of anatomy of the Woman's Medical College of Philadelphia is vacant, through the recent death of Dr. Parish.

Clinical Department.

REPORT OF A CASE OF APHASIA AS A COMPLICATION OF MEASLES.

BY WARREN R. GILMAN, M.D., WORCESTER, MASS.

THE patient, a strong, healthy boy of nine years, was out of doors as usual Nov. 10. He complained of not feeling well that evening, ate little, and was rather restless during the night. About thirty-six hours later the rash was well developed, and it was evident that the disease was measles. The course of the disease was not remarkable in any particular during the next three days. There was a profuse eruption, moderate fever, but no delirium. On Nov. 15 the eruption was fading and the patient felt so well that he was allowed to sit up for a short time. During the night he became restless and delirious, and the nurse had some difficulty in restraining him.

When I saw him on Nov. 16 he was very dull, apathetic, and could not be roused to give any sign of intelligence. For twenty-four hours he was apparently unconscious of his surroundings. There were several brief periods of mild excitement, but there were no convulsions. There was no paralysis. He passed urine and had several evacuations of the bowels in bed without giving the nurse any warning, but these acts were accompanied by straining efforts and were not strictly involuntary.

In the afternoon of Nov. 17 he sat up in bed and looked about the room. He was confused and dull, and, although it was possible to attract his attention by speaking in a loud voice, he showed no evidence of any comprehension of words or signs. On the next day, Nov. 18, he tried to talk, but his efforts resulted only in the endless repetition of "Mother, mother, mother."

On Nov. 19 his expression was much more intelligent, although there was still some confusion and astonishment in his face. He saw the people in his room, but I think he did not recognize the individuals. An occasional, explosive "Gee!" expressed his feelings very well. The only other word at his command was "Mother"; and in the recurring utterance of this word his pauses and inflections indicated that he was trying to express ideas and thoughts. At one time the inflection indicated a question; at another, an assertion. The question was the more frequent form, and it seemed quite plain that he was trying to ask why we could not understand him. He evidently thought that he was talking intelligibly and did not notice his deficiency. He understood and obeyed the request to lie down. Used the bed pan. Examination of urine negative. Rash entirely gone. In drinking milk from a cup, he sipped slowly, filled mouth and then had difficulty in swallowing; several times the milk was belched from mouth but was not regurgitated through the nose. This accident made him angry, and he expressed his disgust very plainly by gestures and an emphatic "Gee!"

On Nov. 21 he was able to understand questions and orders very well, but was still somewhat dull. Had added several words to his vocabulary, but was not able to form sentences. On looking out of the window and seeing one of the housemaids, said, "Hello, Kate." Understood the account of a football game which was read to him. Passed his time in kicking a football about the room; made the nurse understand that he wanted his shoes for this sport; hummed a tune correctly; did not attempt to sing. Pupils equal and react normally. Knee jerks normal. Babinski reflex not present. No paralysis of any kind; swallowed food easily.

Nov. 23, bright and wide-awake. Understood everything read or spoken to him. When a column of several figures was added up incorrectly he detected the error at once. Wrote his name for the first time. Used more words and would get part way through a sentence before coming to grief. Did not use wrong words, but came to a stop when he could not get the word he wanted. Attempts to get him to repeat words and to write words from copy or dictation were not satisfactory. He was conscious of trouble, and would not expose his weaknesses. Nov. 28, read stories to a younger brother and hesitated very little. Wrote from dictation or copy very well. Improvement continued, and on Dec. 1 he was practically well.

The measles was not severe and the rash came out quickly. On the third day the temperature reached the highest point, 104.5. It declined quickly as the rash faded and on the fifth day was 100. During the night he became very restless, but soon fell into a dull, unconscious state. There were brief periods of excitement, but as a rule he lay in bed with eyes open, understanding nothing said to him and seeing nothing. There was complete inhibition of the auditory and visual centers and also of the higher speech center. There was no paralysis of the muscles of face, lips or extremities.

Restoration of function began in the visual and auditory centers, as is the rule, I believe, and he gradually regained the power of visual and auditory perception. The function of these sensory centers was completely restored before recovery of the higher kinesthetic centers. His first attempt at speech resulted only in the recurring utterance of the one word "Mother!" and an occasional exclamation, "Gee!" or "Oh!" For two or three days these were the only words he could utter. He received definite normal impressions on the visual and auditory centers, and very soon showed that he wished to express his ideas and wishes. This he was unable to do either in speech or writing. His vocabulary grew gradually and there were no mistakes in the use of words. When he could not get the word he wanted, he simply stopped. There was inability to read or write. He soon recovered the power to read and to understand figures, and could read a newspaper before he could write more than his own name. It is interesting to note that he hummed a tune correctly before he used complete sentences.

Severe disturbances of the nervous system occur very frequently in nearly all the acute infectious diseases, coming on as a rule late in the disease or during convalescence. There may be a gradual development of a general peripheral neuritis or a sudden attack of unconsciousness from which there is speedy recovery, disclosing the presence of various forms and degrees of paralysis. The paralysis of muscles of the extremities, face or throat in diphtheria is the most familiar example. It is now generally believed that these palsies of diphtheria are due to a general or peripheral neuritis caused by the toxin of the disease.

In typhoid fever there are frequently severe nervous disturbances. Hemiplegia and facial and hypoglossal paralysis occur. Postmortem examinations have sometimes shown hemorrhage, embolism and thrombosis of cerebral vessels. At times aphasia has been observed in connection with these severe complications.

Some writers feel warranted in grouping certain cases of very slight peripheral paralysis with aphasia, or cases of aphasia alone, into a distinct class. These cases recover quickly and are said to be the result of some slight and temporary change in the cortex of the brain, probably congestion or edema. It seems to me more reasonable to say that such symptoms are caused by the direct action of a toxin upon the nerve cells in the sensory and motor centers of the cortex. There may be some gross change like congestion or edema as a result, or there may be no visible change whatever. In scarlet fever, paralysis of peripheral or cortical origin occurs less frequently than in diphtheria or typhoid fever.

Various forms of paralysis have been noted in whooping cough, and they have usually been looked upon as the result of vascular changes. In the *New York Medical Journal*, June 6, 1903, C. J. Aldrich reports a case of peripheral neuritis showing slight paralysis of legs, hands and palate. He considers the cause of the neuritis to be the toxin developed in the course of the acute disease.

It is stated in textbooks that severe or mild nervous disturbances may follow measles; but I have not found reports of any specific cases during recent years. Writers usually refer back to the monograph of Clarus written in 1874, and in that article very few cases are cited.

In the case which I have reported I believe that the sensory and motor aphasia was caused by the action of the toxin of the disease, measles, upon the centers in the cortex of the brain. Hemorrhage or embolism seem quite improbable. The measles was not severe and the cough was mild in character. The patient was a healthy boy whose heart, kidneys and blood vessels were normal. There was no paralysis of extremities or face; and the paralysis of the throat, if it was paralysis at all, was extremely mild and lasted but a few hours. Recovery from the aphasia was prompt and complete.

Medical Progress.

REPORT ON OBSTETRICS.

BY FRANK A. HIGGINS, M.D., BOSTON.

TUBERCULOSIS OF THE PLACENTA.[1]

WITHIN the past few years several cases of placental tuberculosis have been described. The first case, demonstrating the transmission of tubercle from mother to fetus, was described by Schmor and Birch-Hirschfeld. The patient was seven months pregnant, and died of acute miliary tuberculosis. A dead child was delivered by Cæsarean section. In the blood of the umbilical veins, capillaries of the liver, intervillous spaces and vessels of the chorionic villi, tubercle bacilli were found. Pieces of tissue removed from the fetus and introduced into rabbits produced typical tuberculosis. Lehmann[2] described a case where the placenta from a case of acute tuberculosis contained tuberculous nodules with typical bacilli, and similar cases have been recorded by Kockel[3] and Kynoch.[4] In all those cases the fetal portion of the placenta was chiefly affected. The surface and stroma of the villi contained granulation tissue with tubercle bacilli. The vessels of the villi were in some cases obliterated, and the bacilli were supposed to have reached the interior of the villi from the intervillous spaces through an epithelial defect on the surface.

Runge[5] reports a case where tuberculous changes were found in the decidua serotina. Patient, aged thirty-two, died of general tuberculosis. On the posterior wall of the uterus, which contained a four months' fetus, gray nodules were found. The appendages were normal. Pieces of placenta were cut and stained. A few tuberculous masses with giant cells were found in the chorionic villi. In the decidua, and reaching as far as the glandular layer, there were well-defined tuberculous foci. No tuberculous change was found in either the decidua vera or reflexa. Necrotic changes and abundant hemorrhages, resulting in detachment of the villi, would account for early abortion in those cases as contrasted with the cases where the tuberculous changes were chiefly confined to the villi.

Warthin[6] and Cowie report the case of a woman with acute miliary tuberculosis, in whom abortion at the seventh month occurred the day before death. Placenta and fetus showed no macroscopic lesions, but the microscopic examination showed that the placenta was filled with thrombi, composed of red blood cells or possibly of blood plates, which thrombi contained great numbers of tubercle bacilli. The thrombi occurred chiefly in the intravillous spaces. Of interest was the behavior of the syncytial cells, which seem to have been especially resistant to the tuberculous process, since in many instances they had grown over and around the thrombi. The giant cells of the thrombi Warthin thinks were composed of leucocytes. Great numbers of the tubercle bacilli were found in the blood vessels of the liver of the fetus. The fetal tissues seemed especially resistant to the growth of the organism. Warthin believes that congenital tuberculosis is possible, and should be considered as a possibility. In this case the presence of the bacilli was demonstrated both in sections and in inoculation experiments.

[1] Edin. Med. Journ., June, 1903.
[2] Deutsche med. Wchnschr., Leipzig, 1893.
[3] Beitr. z. path. Anat. u. z. allg. Path., Jena, Bd. xvi.
[4] Scot. Med. & Surg. Journ., Edinburgh, 1897.
[5] Arch. f. Gynæk., Berlin, Bd. xlviii, Hft. 2.
[6] Amer. Med., June 6, 1903, p. 897.

INCARCERATED GRAVID UTERUS REPLACED BY THE COLPEURYNTER.

Albert[7] reports five cases in which he has had marked success in replacing the retroverted incarcerated pregnant uterus by means of the rubber colpeurynter inserted into the vagina. He first empties the bladder by a catheter, and he emphasizes the importance of doing this in all cases before making a diagnosis of retroversion. The patient is placed on her side and the colpeurynter introduced, and slowly filled with sterile water. Usually a few hours only is necessary for replacement, but if improvement does not shortly occur, more fluid may be introduced to secure further distention. The uterus is slowly raised without pain or injury to the contents. The bag may be left in over night if necessary. One of his cases was replaced within two hours, but had been incarcerated for over three weeks. He has never yet failed to relieve the condition without difficulty. A pessary may be inserted to control the uterus after replacement if the pregnancy is under four months.

PREGNANCY AND LABOR FOLLOWING NEPHRECTOMY.

Bovée[8] notes the infrequency of recorded cases of pregnancy and labor following upon nephrectomy. He mentions Steinheil's case, where the left kidney had been removed for tuberculous disease at the second month of pregnancy, associated with pus and blood in the urine. In this case the urinary symptoms improved, and the patient was delivered at full time of a healthy child. She died two years later from recurrent tuberculous disease.

Schramm reports the case of a woman, aged twenty-five, who had the right kidney removed for hydronephrosis. Five weeks later she was discharged from the hospital with a slight amount of pus in the urine. The left kidney was normal. She became pregnant four years later, and had a normal confinement, the urine being then free of pus. He refers to Fritsch's case, where nephrectomy for ureteral fistula had been performed on a patient who afterwards became pregnant and had a normal confinement, with subsequent good health.

Bovée's own case was one of complete nephroureterectomy for pyonephrosis, renal calculi and miliary abscess in the ureter. She was

[7] München. med. Woch., March 24, 1903.
[8] Am. Gynæc., vol. i, No. 5, and vol. ii, No. 4.

confined a year later, labor being normal, the child weighing 10½ pounds. The third day after delivery she complained of great abdominal pain, referred chiefly to the course of the left ureter, associated with rise of temperature. Six months later the urine contained a considerable amount of albumin.

Baldwin [9] also remarks on the frequency of nephrectomy and the infrequency of reported cases of pregnancy and labor following the operation. He reports two cases of his own, one of which became pregnant three years after nephrectomy and the other eighteen months. Both patients had normal pregnancies and confinements with normal urines. He concludes, therefore, that the prognosis of pregnancy following nephrectomy is by no means unfavorable.

The question of vital importance in these cases is the permanent effect of pregnancy and labor upon the remaining kidney. In the case of Steinheil the patient succumbed to the extension of the tubercular process to the remaining kidney. Whether pregnancy and labor caused this extension in part or entirely could not be determined. Certainly the woman had not suffered from renal trouble during the seven years following nephrectomy, but died one year and nine months after delivery. In Schramm's case no history of the patient subsequent to her discharge from the hospital was given. In Bovée's case the condition of the remaining kidney did not seem to be worse than before pregnancy. He has little doubt, however, that pregnancy and labor following nephrectomy seriously jeopardized the life of the patient; that the renal complications must necessarily be greatly increased, and therefore induction of premature labor is necessary.

SECONDARY PERINEORRHAPHY IN THE PUERPERAL PERIOD.[10]

Bohnstedt [11] reports ten cases of secondary perineorrhaphy, performed during the puerperium, within two weeks after labor. In eight of these cases sutures were applied immediately after labor, but no union was obtained. In the other two cases no sutures were applied after labor, and the patients were operated on on the fifth and the thirteenth days respectively. In no case was there a complete failure after secondary perineorrhaphy, although a relative failure resulted in four cases, of which three were referable to suppuration in the catgut sutures. The author operated upon all the cases of perineal tears that were found to be incompletely healed, and did not select cases in which the wound was covered with fresh granulations. He did not pay special attention to this circumstance, because he denuded the wounded surface very carefully, removing any false membranes that had formed. Evidently germs reached the denuded surface from these false membranes. Hence, the rule should be that a secondary perineorrhaphy should never be performed until the wounded surface has cleaned up completely. The operation must also be avoided if the woman is showing even a slight elevation of temperature, as its success is not probable in such cases. The author recommends the use of cocoaine as a local anesthetic in these operations.

His results are not sufficiently alluring to tempt one to operation at such early periods, unless unusual conditions appeared to demand it. It would seem better under ordinary circumstances to postpone the secondary operation for a few weeks until the tissues are in such shape that a cure could be reasonably assured.

ANESTHESIA IN LABOR.

Von Steinbuchel [12] thinks that the ideal anesthetic during labor is one which deadens all pain, yet does not influence the uterine contractions. If it be inhaled it must not be dangerous either to mother or child nor produce atony of the uterus after expulsion of the ovum, as frequently follows use of chloroform.

Such an anesthetic, he thinks, he has found in the scopolamin-morphin mixture. The value of this mixture lies in the action of small sub-toxic doses of these drugs, which possess antagonistic properties. Von Steinbuchel used scopolamin (hyoscine) hydrobromate in doses of .3 mgm. combined with morphin muriate .01, injected subcutaneously. If he does not get the desired effect from the first dose in one half hour he repeats it. From his use he advises its acceptance as a means of allaying all nervousness. In some cases he combines it with inhalations of ether or chloroform if the pains are very severe. In no case has he had bad effects.

Among the agents employed for short general anesthesia in obstetrical practice the bichloride of ethyl has been greatly advocated. Von Hacker was the first to use this agent as a general anesthetic, and in a series of 66 cases he found that complete anesthesia resulted in sixty to ninety seconds and that vomiting and subsequent headache were lacking or very insignificant. Soon after Lotheisen reported a series of 170 cases in which vomiting occurred in 18 and the period of excitement in 13. Other observers have recorded similar results from its use.

Lepage and Le Lorier report fourteen cases in which they used chloride of ethyl as an anestheic in obstetric operations, and from their experience they can recommend it highly. They found that they obtained anesthesia in thirty to sixty seconds. This continued for four minutes without a second administration. The return to consciousnesss, once begun, progressed rapidly, and was not followed by vomiting. They claim that it can be used very advantageously when a rapid and urgent extraction of the fetus is necessary, or where manual delivery of the placenta becomes necessary, or where a ruptured perineum must be sutured. Their

[9] Cleveland Med. Journ., May, 1903, p. 213.
[10] N. Y. Med. Journ., April 25, 1903, p. 762.
[11] Journ. Akouscherstva i Gienskich Bolesney, December, 1902.
[12] Obstetrics, Peterson, April, 1903.

method of administering this anesthetic is similar to that of chloroform or ether.

Wild [13] reports the use of scopolamine and morphin for narcosis in eight operations. Anesthesia follows at varying intervals and lasts from seven to fourteen hours. In seven cases the effect was good. But there is danger of morphin intoxication, as the bad results in the last case show. Therefore Wild sounds a note of warning against the general employment of this method. The dosage is minutely described.

GLYCOSURIA GRAVIDARUM.

Ruoff [14] says that this condition is not so uncommon as it is unrecognized, owing to neglect to examine for it. The condition or its treatment does not differ essentially from glycosuria in the non-gravid subject. Its frequency is purely a matter of speculation. It may develop during pregnancy, or pregnancy may occur during glycosuria. His conclusions are as follows:

Glycosuria gravidarum may arise at any stage of pregnancy. It is not so serious as when diabetes antedates pregnancy.

It may disappear in one pregnancy and reappear in another, and end fatally after successive attacks. It frequently arises during parturition, but is of no great importance.

Labor is not materially affected, other conditions being equal. Pregnancy is most likely to be interrupted. It is very destructive to the fetus — more so than syphilis. Maternamortality is nearly 50%. Diabetics should not marry. Death is usually by coma, no case of eclampsia having ever occurred in a diabetic.

UTERINE ACTION.

Stephenson[15] discusses the subject of uterine action in its bearing on the management of labor. He combats the statement that the first point in the prevention of post-partum hemorrhage is not to deliver in the absence of uterine contraction, on the ground that the main factor in preventing hemorrhage is retraction of the uterus, a force independent of contraction. He says that the term "retraction" was introduced by Duncan, and was held to be a useful term to designate the condition of the walls of the uterus whereby its capacity was permanently lessened in proportion to the diminution in bulk of its contents. But while Duncan believed retraction to be a force independent of contraction, although like it, dependent on the action of muscular fiber, the general opinion was and is that retraction was dependent on contraction, and was the permanent shortened condition of the muscle after contraction when the active contraction had passed off. On this theory, retraction without contraction is impossible, and to deliver except during contraction must be unsafe. Stephenson's view is that retraction is a force small in amount, but continuous in its action, independent of contraction, dependent upon the muscle tone of the uterus, the retractility of the peritoneum and possibly on the action of the yellow elastic fibers. Retraction counteracts the force of the blood pressure, tending to expand the uterus, and must therefore be itself a force. The tonus of healthy muscle might be enough to counteract the blood pressure, but it is easy to show that a stronger force than this is in time exerted, either by attempting to turn after the liquor amnii has for some time drained away, or by trying to pass the hand through a retraction ring. The resistance offered is not of the nature of a contraction, tetanic or otherwise, for when once established it is permanent. The action of the peritoneum is considered. The peritoneum is closely applied to the uterus in the parts where active retraction is manifested, and itself retracts as the uterus diminishes. The expansion of the peritoneum with the gradual increase in bulk of the uterus is an example of the plasticity of inelastic substances whereby they spread out under the influence of a small force steadily applied. That it is not of the nature of elastic expansion is proved by the fact that the tension of the membrane is not increased. Nor can the diminution in surface extent of the peritoneum with the emptying of the uterus be considered as an elastic recoil; retraction describes the movement and implies no theory as to the nature of the force. This property of the serous coat enables it to take a share in the retraction of the uterus, and there is no reason to believe that its action is affected by exhaustion of the muscular tissue. The conclusion of practical importance is that retraction as a force is continuous and not intermittent, and that its action may be relied upon in the absence of contractions. Examples are given in which retraction reduces the cavity of the uterus in the absence of pains: (1) In Cæsarean section, where both child and placenta are removed without waiting for a pain; (2) in various complications of pregnancy where it is deemed advisable to empty the uterus artificially without first inducing labor; (3) in excessive hydramnios the membranes are ruptured, and the author always finds that the uterus retracts steadily without any evidence of contraction; (4) in severe hemorrhage with retained placenta the author invariably introduces his hand into the uterus and removes the placenta, and the hand is kept in the uterus until contraction occurs, or more frequently until the cavity lessens by steady retraction.

(To be continued.)

[13] Berl. klin. Woch., March 2, 1903; Phila. Med. Journ., April 11, 1903, p. 625.
[14] Amer. Med., April 25, 1903, p. 665.
[15] Journ. Obst. & Gyn. Brit. Empire, May, 1903.

IT is stated that there were 702,083 paupers in England and Wales at the end of May, London alone claiming 105,277 of these. The ratio is 21.3 per 1,000 of the population, as against a proportion of 48.3 per 1,000 in 1863.

Reports of Societies.

THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

TWELFTH ANNUAL MEETING, HELD IN BOSTON, MAY 19, 20 AND 21, 1903.

THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES opened its twelfth annual meeting in Faneuil Hall, Boston, Mass., where addresses of welcome were made by the Hon. J. L. Bates, Governor of the Commonwealth, Dr. George E. Francis of the Massachusetts Medical Society and Surgeon-Gen. Robert A. Blood of the governor's staff. General Blood discussed the value of the Association of Military Surgeons in bringing into harmony the work of the medical officers of the Regular Service, the National Guard and the Volunteers, considering this in the light of his own practical experience during the War of the Rebellion and the Spanish-American conflict, and held that with the facilities afforded by the association for uniform conduct nothing but the failure of the government to make prompt, proper and ample appropriations could interfere with the highest efficiency of the medical service.

PUBLIC SERVICE MEDICAL SCHOOL.

LIEUT.-COL. J. V. R. HOFF, U. S. A., as chairman of the committee upon this subject, reported briefly on the work of the army and navy medical schools for the year, and described the recommendations of the surgeon-general of the army relative to the establismhent of an army medical school in which a candidate, a medical graduate, should pass one year as a medical cadet and four years as a medical officer, during which period he should bind himself not to marry without permission from the Secretary of War. Colonel Hoff, however, proposes to go still farther and educate the government medical officers *ab initio* at an institution similar to the military academy at West Point, in which preparation shall be made for all branches of the medico-military service, and presented numerous cogent arguments in favor of the plan.

COL. R. R. DE WREDEN, Russia, described the Imperial Medical School at St. Petersburg, in which he was on duty. This school gives its students their entire medical as well as military education, and its graduates are assigned to hospitals or to regiments in accordance with their class standing; the seven highest are sent abroad to elaborate their studies and return as adjunct professors, the next highest men are assigned to hospitals and the remainder to regiments.

THE EDUCATION OF THE MEDICAL OFFICER OF THE ARMY.

MAJOR W. C. BORDEN, U. S. A., gave a succinct survey of the subject of postgraduate instruction in the United States army, especially dwelling upon the work of the army medical school, and incidentally referring to the similar schools of other countries. He believed in the extension of the facilities of the army medical school to the medical officers of the militia.

SURGEON H. G. BEYER, U. S. N., would limit the work of the school to distinctly military medical study.

COL. G. S. RYERSON, Canada, appreciated particularly the necessity of training the medical officer in the administrative features of his duty, and described the Canadian method of attaining that end.

COL. W. J. CHARLTON, England, described the preparation of the young medical officer in the British service, beginning formerly at Netley and finishing at Aldershot. Since the Boer War the Netley School has been supplanted by the Royal Medical Staff College in London. He noted also that postgraduate work had been established for all officers up to the grade of lientenant-colonel by detail at large London hospitals.

MEDICAL INSPECTOR J. C. WISE, U. S. N., dwelt upon the fact that a military medical officer is first of all a doctor, and urged that this fact be not lost sight of in technical training.

MAJOR W. C. BORDEN, U. S. A., admitted the necessity of thorough professional training in the military medical officer as a prime factor, but he recognized that in military service administrative work was also of great importance. The former the militia and volunteer officer had ample opportunities to acquire; it was not proposed to extend to him the opportunity of obtaining the latter also.

MAJOR AZEL AMES, U. S. V., did not deny the value of training in administrative work, but he feared that it would not be practicable to secure a considerable attendance of militia officers at a national military medical school.

LIEUT.-COL. C. C. FOSTER, Massachusetts, suggested the preparation of a published guide to the militia medical officer, and dwelt upon the value which such a work would have had in his own work in the Spanish War.

GEN. E. C. BRUSH, Ohio, remarked that in Ohio medical officers were appointed for life, and believed that if there were a military medical school at Washington adapted to their instruction, his young officers would attend it.

LIEUT.-COL. N. S. JARVIS, New York, commented upon the professional absorption of the young practitioners from whom the junior medical officers of the National Guard were to be drawn, and the difficulty with which they could get away to a military medical school.

MAJOR G. C. JONES, Canada, adverted to the evolution of the Canadian Army Medical Staff, during which the government sent a number of medical officers to England in order that they might become instructors of their comrades, which was done in the annual camps of instruction. He described his experience with the Canadian contingent in the Boer War, and referred to the need also of instruction by the non-commissioned officers of the medical department.

LIEUT.-COL. J. K. WEAVER, Pennsylvania, doubted the practicability of educating militia medical officers at a national school, and was favorably impressed with the idea of placing in the hands of medical officers such literature as may be necessary for their information.

THE ACTING ASSISTANT SURGEON.

MAJOR AZEL AMES, U. S. V., commented upon the anomalous position of the acting assistant or contract surgeon of the army, observing that he had all the responsibilities and shared all the dangers of his commissioned confrère without either the honors or rewards to which the latter may look forward. He can anticipate no promotion, he has no increase in pay for length of service, he has no retirement nor pension when he becomes worn out in the service. The author forcibly urged the improvement of the status of the civilian military surgeon in every respect.

THE DEGREE OF DOCTOR OF PUBLIC HEALTH.

MEDICAL DIRECTOR PAUL FITZSIMONS, U. S. N., emphasized the necessity for expert sanitary training for military and naval medical officers, and showing that their training and experience makes them *de facto* if not *de jure* doctors of public health.

THE UNITED STATES ARMY GENERAL HOSPITAL AT THE PRESIDIO OF SAN FRANCISCO, CAL., 1901–1902.

COL. ALFRED C. GIRARD, U. S. A., made an exhaustive report of one of the largest of the United States army hospitals during its most active period, which was divided into six parts: (1) General Administration, (2) Medical Work, (3) Surgical Work, (4) Bacteriological Work, (5) Eye, Ear, Nose and Throat Work and (6) X-ray Work. The enlisted force on duty averaged five hospital stewards, nine acting hospital stewards and one hundred and sixty-seven privates. During the year five hundred and six female nurses were on duty, the average per month forty-one. The total number of patients was four thousand five hundred and fifty-one, with ninety-two deaths. The surgical cases of the year numbered seven hundred and twenty-eight, of which one hundred and six were herniotomy, thirty-five were for varicocele, twenty-seven for appendicitis, fifty-eight for gunshot wounds, ten for bolo wounds, ten for hepatic abscess and twenty-seven for tumors. The paper followed with a concise description of the methods of operating employed in connection with hemorrhoids, appendicitis, hernia and varicocele. The pathological and bacteriological work of the hospital was of a specially high order and in charge of Dr. C. F. Craig. The blood and urine of every patient was examined in all cases of suspected pulmonary tuberculosis or diarrheal trouble, and the report included a valuable study of the results of his work, throwing much light upon malarial, estivo-autumnal and Malta fever and dysentery. The report was accompanied by particularly valuable appendixes upon liver abscess and the mosquitoes of the Philippines.

AMBULANCE FOR MOUNTED TROOPS.

The author, LIEUT.-COL. H. G. HATHAWAY, R. A. M. C., was medical officer in charge of Cavalry Divisional Staff during the South African War and was greatly impressed with the difficulty of keeping the medical department in touch with the rapidly moving forces with which he was on duty. He endeavored to accomplish this in two ways: (1) By an appliance to be attached to the saddle for the use of men who were able to remain mounted with a suitable support. This saddle support consists of an encircling padded belt connected with the saddle by a metal leather-covered support behind. (2) By a light, strong platform cart with strong springs so arranged as to carry eight sitting or two recumbent cases. These appliances were carefully described and the equipment detailed with care.

QUARANTINES AS THE PICKET-LINE.

SURGEON P. C. KALLOCH, P.H. and M.H.S., gave an eloquent description of the work, privations and accomplishments of the quarantine officer.

THE SURGEON-GENERALS OF THE ARMY.

MAJOR JAMES EVELYN PILCHER, U. S. V., read a series of biographical sketches of the chiefs of the medical department of the army, from the Revolution to the close of the hostilities in the Philippines, illustrated by a complete series of portraits, many of them displayed for the first time.

NEW ENGLAND MEN IN THE MEDICAL CORPS OF THE NAVY OF THE UNITED STATES.

MEDICAL INSPECTOR F. B. STEPHENSON, U.S.N., presented a comprehensive historical sketch of the Navy Medical Corps, with a list of the natives of New England who had served as naval surgeons, and biographical sketches particularly full in relation to representatives from the Commonwealth of Massachusetts.

THE INSTRUCTION OF THE HOSPITAL CORPS IN COMPANIES AND DETACHMENTS.

The author, CAPT. F. P. REYNOLDS, U. S. A., had been in command of the U. S. Army Hospital Corp, Company of Instruction No. 1, for several years, and spoke with recognized authority on his subject. The points noted were: (1) Methods of maintaining discipline, (2) bearer drill, (3) anatomy and physiology, (4) diet cooking, (5) nursing, (6) care of animals, (7) first aid, (8) field work, (9) clerical work, (10) materia medica and pharmacy. The principles upon which the company work should be based appear to be: (1) To at once impart a thorough knowledge of discipline in the same way and by much the same methods as it is imparted in the line of the army, with which the hospital corps is always serving. (2) To teach men the principles

of order and neatness, both as regards themselves and their personal equipment, and also to familiarize them with the departments of a hospital and the articles with which they work. (3) After this, to impart to each man a knowledge, as far as his mental capacity will permit, of practical nursing, of preparation of diets for the sick, of first aid and transportation of the wounded, and of ambulance driving and care of animals. (4) To teach them to care for themselves and the equipment entrusted to them in field service, and to be familiar with the usual duties of hospital corps men on the march, in camp and during an engagement. (5) To instruct in clerical work, materia medica and pharmacy, those who have aptitude for such work.

SICK-BAY NOTES.

SURGEON G. F. STOKES, U. S. N., read a selection of a few cases from the medical journal of the steamship *Oregon* to show the varied character of naval practice, and comprised: (1) Pneumonia, (2) fracture of the base of the skull, (3) varioloid, (4) typhoid, (5) filaria sanguinis hominis, (6) malarial fever, (7) tuberculosis, (8) fracture of the tibia, (9) diphtheria.

SERVICE CONDITIONS IN RELATION TO RETIREMENT AND PENSIONS.

MEDICAL DIRECTOR JOHN C. WISE, U. S. N., stated that the medical officers of the army and navy are more directly responsible than any one else for the ultimate incidence of our vast pension appropriation. The author urged the highest care in diagnosis and record, with especial attention to the question of incurrence in the line of duty.

CIRCUMCISION AND FLAGELLATION AMONG THE FILIPINOS.

LIEUT. C. N. BARNEY, U. S. A., commented upon the prevalence of circumcision among the Philippine indios. A polished piece of wood, sufficiently curved, is driven into the ground so that the boy to be operated upon can squat upon his hands and insert the free end of the stick, which is pointed, between the glans penis and the prepuce; after the prepuce has been drawn over the point, the operator places a knife so that the edge rests lengthwise upon it and gives the blade a sharp blow with a stick, thus dividing the tissues and exposing the glans. The wound is dressed with guava leaves in poultice or in powder. The results of flagellation were also described and their treatment commented upon.

PREVENTION OF THE SPREAD OF INFECTIOUS DISEASES ON BOARD SHIP.

SURGEON HENRY G. BEYER, U. S. N., in reading this paper confined himself to the consideration of measles, an affection of singular importance in military and naval service, and recognized that the chief danger of infection in this and allied diseases lay first and foremost with the patient himself and only secondly with persons and things with which he had been brought into contact. The author's practice then was, having diagnosed the disease, to spread out a clean white sheet upon which the patient stepped and left all his clothes including his shoes; all were sterilized by steam except the shoes, which were disinfected with a solution of bichloride of mercury. The patient received first a thorough scrubbing with soap and warm water and a complete sponging with bichloride (1:2000), and was put to bed wrapped in a sheet moistened with the same solution. The bichloride bath was repeated three times daily during the height of the eruption, twice a day thereafter. The mouth and nose were cleansed frequently with normal salt solution containing a minute quantity of carbolic acid or bichloride. Antiseptic cloths were provided for the secretions of coughing or sneezing. All excretions were immediately disinfected and all complications promptly treated. While the patient was in bed all his clothing was disinfected. By use of these precautions it was possible to readily control the spread of the affection.

THE PRESERVATION OF THE HEALTH OF THE SOLDIER.

BRIGADE-SURGEON LIEUT.-COL. WILLIAM HILL-CLIMO, A. M. S., concluded after an interesting survey of the subject, both from British and American standpoints, that a nation whose system of recruitment is voluntary should use every effort to improve the physical development of the people, so that all classes in an emergency should be equally capable of undertaking military service; that, after enlistment, the recruit should be prepared for training which he should not undergo until pronounced fit; that during training, and all through his subsequent service, his health should be carefully supervised; that these measures are specially required for countries whose army organization is not single but composite, that is to say, when the troops consist of regulars, militia, volunteers, etc., and are raised under different conditions of service; that these measures must be entrusted to the medical service, and that full power must be given it to carry them out.

THE RESULTS OF TWO SEASONS OF ANTI-MALARIA WORK.

LIEUT. F. F. RUSSELL, U. S. A., summarized in this paper the observations made at Fort Washington, Md., on the left bank of the Potomac, thirteen miles below Washington. The use of petroleum upon the stagnant breeding pools in the neighborhood was immediately beneficial, resulting in the first year in the diminution of the percentage of malarial cases from 19.53% to 8.63%, which was still farther reduced the following year to 4.18%. The oiling was soon regarded as merely a temporary resort, and a general drainage system was provided. He notes also the great increase in the comfort

of living due to the abolition of great swarms of culex, which formerly made life almost unendurable.

EPIDEMIC CATARRH ON SHIPBOARD.

PASSED ASSISTANT SURGEON DUDLEY N. CARPENTER, U. S. N., related a year's clinical observation on the battleship *Illinois*. Especial attention was directed to the evils of poor ventilation and overcrowding in accentuating the disease, while the etiology, clinical history and treatment were fully considered

TREATMENT OF TUBERCULOSIS AT FORT STANTON, N. M.

SURGEON PAUL M. CARRINGTON, P. H. and M. H. S., spoke of the climate as characterized by extreme dryness, a large proportion of sunny days and great purity of the atmosphere, which appears to be free from pathogenic germs, — wounds of all kinds healing very kindly and without infection even with the most careless disregard of asepsis. On the appearance of winter, mixed infection cases invariably lose their mixed character. The rarefaction of the atmosphere makes deeper breathing necessary and the decreased barometric pressure induces a diminished liability to hemorrhages. The author is a sturdy advocate of tent dwelling for the consumptive. The spread of infection is controlled by the use of the spit-cups and periodical disinfection of apartments. While an advocate of exercise under favorable conditions, the author believes that the advice to "go West and rough it on a ranch" is responsible for many unnecessary deaths.

THE MEDICAL TREATMENT OF APPENDICITIS IN ACCORDANCE WITH THE MODERN PRINCIPLES OF THERAPEUTICS.

LIEUT. E. CASTELLI, the Italian delegate, believed the disease to be a closed wound in which the colonization of microbes and the action of toxins accomplished their work undisturbed. The therapeutic equation to be solved is the same as that reached by surgery, except that for the term "local antisepsis" must be substituted the term "general antisepsis," and internal antisepsis becomes the basis of action. The appendix must be considered as a tubular ganglion receiving germs either from the blood or the lymphatics, whence appendicitis may become a complication in cases of scarlet fever, pneumonia, erysipelas, parotitis, etc. The author is profoundly opposed to the internal treatment by opium or the local action of ice, but resorts to preliminary treatment by salicylate of sodium as a cholagogue and anti-thermic; three hours later he begins to administer calomel for its action as an intestinal antiseptic, cholagogue, laxative diuretic and stimulant of the pancreatic secretions. For the relief of pain he employs the warm bath and enemata of hot salt solution. The bacterial cause of the trouble, residing in the blood, is treated by subcutaneous injection of a dilute solution of carbolic acid.

THE PATHOLOGY OF LATENT MALARIAL INFECTION AS OBSERVED AT AUTOPSY.

LIEUT. CHARLES F. CRAIG, U. S. A., by latent infection means malarial infection, which is not manifested by any symptoms and in which an examination of the blood does not necessarily show the presence of malarial parasites. The pathology of latent tertian infection is confined almost entirely to the spleen, the liver being but slightly involved. The changes in the spleen consist chiefly in an engorgement of the splenic sinuses with red cells and leucocytes, the presence of infected red cells and of phagocytes and melaniferous leucocytes, an increase in the cells of the splenic pulp with more or less degeneration and karyokinesis and pigmentation of the organ confined to the edges of the Malpighian corpuscles and the splenic sinuses and trabeculæ. In the liver the chief changes consist in slight pigmentation, more or less venous congestion and the presence of melaniferous leucocytes. The pathology of latent estivo-autumnal infection is also confined practically to the spleen, and it is observed that the parasite is capable of undergoing its entire human life cycle within the spleen, and in such numbers as not to be found in the peripheral blood upon repeated examinations. These facts go to bear out the time-honored theory that the spleen is the seat of malarial infection.

HYSTERIA IN THE MALE.

SURGEON S. G. EVANS, U. S. N., invited attention to the frequency of hysteria in the male in naval practice, and detailed an unusual case of the affection.

AN EPIDEMIC OF DIPHTHERIA ON SHIPBOARD.

MEDICAL INSPECTOR G. E. H. HARMON, U. S. N., gave a careful study of an epidemic diphtheria which occurred upon the United States training ship *Buffalo*, and was particularly noteworthy because of the large number of cases among male patients in early manhood otherwise in robust health, not a case being contracted by a person above the age of thirty. Eighteen percent of the ship's company of 750 men suffered from the disease, and of the 137 cases not a single death occurred after antitoxin treatment was begun. Great care was taken in the examination of the entire ship's company, and all those who showed the presence of the Klebs-Loeffler bacterium were immediately subjected to treatment. The disinfection of the ship and the crew was described with great care.

MAJOR FREDERICK SMITH, D.S.O., R.A.M.C., read a paper on

THE DIFFERENTIAL DIAGNOSIS OF TYPHOID FEVER IN ITS EARLIEST STAGES.

This was the Enno Sander prize essay, and the fact of its award to an officer of the military service of another country was greeted with hearty applause. Major Smith's essay was divided into thirteen chapters: (1) Introduc-

tory. (2) Subjective early symptoms illustrated by the author's personal experience. (3) Objective symptoms. (4) Temperature as an aid to diagnosis of typhoid. (5) Typhus and relapsing fevers. (6) Tuberculosis, diseases of the respiratory system and influenza. (7) Meningitis, septicemia, puerperal fever, pyemia, endocarditis, pericarditis, glanders. (8) Gastro-enteritis, inflammation in the neighborhood of the cecum, dysentery. (9) Febricula, or simple continued fever. (10) Malta fever. (11) Malarial fever. (12) Plague and other diseases which have been mistaken for typhoid. (13) Chemical reactions and microscopical methods in relation to the earliest stages of typhoid. He concluded that in the field the medical officer must rely mainly upon his clinical acumen, and summarized his studies in that direction as: (*a*) There is scarcely any disease accompanied by fever which has not been at times mistaken for typhoid fever. (*b*) A good many cases are wrongly diagnosed owing to mere carelessness or to want of knowledge. (*c*) The disorders most liable to be confounded with typhoid fever are: typhus fever, tuberculosis, pneumonia, influenza, febricula or unnamed continued fever, Malta fever, malarial fever and paratyphoid. (*d*) It is frequently impossible by non-bacteriological methods to differentiate between typhoid and the diseases named above in four days or even a week and more. (*e*) Our safety from a public health point of view lies in regarding all doubtful cases as typhoid until they have been proved to be something else. (*f*) The anomalous cases are more numerous and the difficulties in the way of diagnosis greater in military than in civil life.

In his last chapter he discussed the diazo reaction and fecal, sputum and blood examinations, which, however, he considered hardly practicable in the field, although the serum test is the most reliable and generally practicable of these.

The second place in the prize competition was awarded to ASSISTANT SURGEON W. C. RUCKER, P. H. and M. H. S., whose paper may be epitomized as follows:

(1) There is no single symptom on which alone an early diagnosis of typhoid fever can be made. It is only by careful consideration of the symptom-complex that a clinical diagnosis can be arrived at. (2) The most trustworthy, as well as the earliest, sign of typhoid fever is the presence in the circulating blood of the bacillus of Eberth. (3) The demonstration of the bacillus of Eberth is found in the feces later than in the blood, but with comparative ease. The presence of the B. typhosis in the feces is of great value as a corroborative sign. (4) The presence of the bacillus typhosis in the rose spots is a trustworthy sign, but has no advantages over the examination of the blood from other localities. (5) The serum reaction of Widal is seldom demonstrable during the earliest stages of typhoid fever. It is of value only in the higher dilutions.

HISTORY, CAUSE AND MODE OF TRANSMISSION OF YELLOW FEVER, AND THE OCCURRENCE OF SIMILAR TYPES OF FATAL FEVERS IN PLACES WHERE YELLOW FEVER IS NOT KNOWN TO HAVE EXISTED.

LIEUT. JAMES CARROLL, U. S. A., read an encyclopedic paper tracing the yellow fever from its earliest history to the present time, beginning with the Barbadian epidemic of 1647 and closing with the decline of the disease in Cuba last year. The author was himself the subject of the first experimental case of inoculation with yellow fever by the stegomyia fasciata, and from this and numerous other experiments, reinforced by an exhaustive study of the subject in all its bearings, he concludes that yellow fever as we meet with it is contracted only through the bite of an infected mosquito twelve days or more after feeding upon a patient in the early period of the disease. Experimentally the disease can be produced by the subcutaneous injection of blood or even the unfiltered blood serum of a patient, provided the material can be obtained sufficiently early in the attack.

TREATMENT OF YELLOW FEVER AT LAS ANIMAS HOSPITAL IN HAVANA.

The author, COL. W. C. GORGAS, U. S. A., emphasized the desirability of receiving the patient during the first three days of the attack, and of maintaining him in a recumbent position absolutely without exertion. During the active stage, food was prohibited, and milk began when the temperature subsided unless contra-indicated. Water and cracked ice was permitted *ad libitum*. Cathartics were employed as needed and phenacetine for headache or muscular pains. For urinary suppression or diminution saline enemata and local applications to the back were given. The convulsions were not so largely uremic as had been supposed, but were generally due to the yellow fever poison itself. Gastric hemorrhage is best treated by cracked ice and rest, without astringents. The drugging employed by the Spanish physicians is not approved of, and this view is endorsed by the lower mortality of the American hospital, in which twelve lives more per hundred were saved than in the most successful of the native institutions.

SOME OBSERVATIONS MADE IN THE PHILIPPINES.

SURGEON J. A. GUTHRIE, U. S. N., opened with a humorous picture of the germophobist of the Philippines, the author in happy vein calling attention to some important points to be observed by those going to our possessions in the Southern Seas. Of prime importance is attention to the skin both from a hygienic and entomologic standpoint. He notes the remarkable effect of a land leech in breaking soldiers down on a march. The liquor called "tuba," he describes as a fermented solution of more or less poison-

ous insects, while "bino" is another most dangerous alcoholic poison. Repression of energy, and rest during the heat of the day, are essential to physical welfare, and the American must give up and return home upon the first accession of tropical disease if he desires to save his life. The prevalence of the ever-present dhobie itch is commented upon and precautions against it detailed, while the use of frequent antiseptic washes, douches and gargles is advised.

SANITARY CONDITION OF THE TOWN OF SURIGAO, MINDANAO.

CAPT. HENRY DUR. PHELAN, U. S. V., submitted a report to the chief surgeon of the Philippines, by whom it was forwarded to the surgeon-general of the army, with the recommendation that it be laid before the association as a minute and accurate description of life in a Philippine village, with especial reference to the conditions requiring sanitary attention. It was accompanied by numerous photographs, and comprised a panoramic view of one of the most important phases of the work of the military medical officer in our island possessions.

NOTES FROM THE EXPERIENCES OF A MEDICAL OFFICER IN THE TROPICS.

MAJOR C. F. MASON, U. S. A., employed the term "Diseases in the Tropics" instead of "Tropical Diseases," because there are few if any diseases which occur only in the tropics, but diseases are modified by their occurrence in the tropics, and the relative prevalence of particular diseases is very different from that obtaining in temperate climates. He makes an interesting comparison of the relative frequency of certain diseases in Porto Rico and Panay — filariasis and ankylostomiasis being rare or absent in Panay, while beri-beri and certain fevers are rare or absent in Porto Rico. Gastro-intestinal disorders, especially diarrhea and dysentery, loom up as of overshadowing importance among diseases in the tropics, but he believes that a large percentage of these cases are preventable by the exercise of suitable hygienic precautions.

MALARIAL SCIATICA.

PASSED ASSISTANT SURGEON E. O. HUNTINGTON, U. S. N., read this paper. In view of the increased prominence given to malarial affections by the extension of tropical service, the author submitted a case of extreme sciatica, in which the presence of the quartan parasite was clearly demonstrated and in which recovery was secured by the exhibition of quinine in full doses both by the mouth and by injection directly into the sheath of the nerve.

SOME OBSERVATIONS ON FRACTURES OF THE SKULL.

CAPT. ROBERT E. BELL, M. V. M., read this paper, which was a valuable clinical study of cranial fractures, based upon extensive personal experience by the author.

SPINAL ANESTHESIA IN MILITARY SURGERY.

The delegate from the Mexican Army LIEUT.-COL. AUGUSTIN AGUIRRE, presented an interesting report upon the subarachnoid injection of hydrochloride of cocaine according to the method of Tuffier as practiced at the Mexican Military Hospital of Instruction. Colonel Aguirre makes an injection exactly in the middle line below the spinal apophysis of the third or fourth lumbar vertebra, or possibly below the second or first, in which case the needle passes perpendicularly through the skin, cellular tissues and ligaments at the widest portion of the intervertebral space. To obviate clogging of the needle it is provided with a mandril to be removed when the canal is penetrated. Care is taken to have the solution completely sterilized, to allow the exit of an amount of cerebro-spinal fluid equal to the amount of the solution injected, and to have the patient maintain a sitting posture so as to permit the cocaine to remain in the lower portion of the spinal canal. The advantages of the method are: (1) Ease of application; (2) the possibility of its being performed by the surgeon himself; (3) speedy action — ten minutes as a rule; (4) absolute safety; and (5) a small arsenal, easily carried and readily sterilized. The paper was accompanied by a report of two hundred and ten cases in which the method had been employed.

AN EXTERNAL SUTURE.

CAPT. THOMAS PAGE GRANT, Kentucky, spoke of an application consisting of strips of adhesive plaster with hooks on one end to be attached on either side of the wound, which are drawn together by rubber bands. The application was practically demonstrated upon the living subject.

MY FIRST AID TO THE WOUNDED.

LIEUT.-COL. HENRY O. MARCY, U. S. V., read an interesting description of the trip of the steamer *S. R. Spaulding*, transporting the wounded from City Point, Va., to Philadelphia after the seven days' battles, in 1862. The sufferings of the wounded due to insufficient surgical treatment were clearly brought out, the ultimate results of better care were shown and the methods applied to this end described.

TROPICAL ABSCESS OF THE LIVER.

LIEUT. E. W. PINKHAM, late U. S. A., gave a report of sixteen cases of hepatic abscess occurring in the Military Hospital at Iloilo, Panay, from Aug. 5, 1900, to April 20, 1901, with operation and results. Of the sixteen cases there were seven recoveries, and the author attributes the high mortality to the failure to recognize the trouble at a sufficiently early period. He observes that the so-called abscesses of the liver are not abscesses nor are their contents pus; they are rather areas of necrosis or liquefaction of the liver tissues, and made up of liver cells in all stages of degeneration and disintegra-

tion, free fat globules, more or less of blood corpuscles and serum. He comments upon the freedom with which the liver may be examined without dangerous hemorrhage, and objects strongly to evacuation and drainage by means of the trocar and canula, urging free incision.

WOUNDS BY LEAD AND JACKETED BULLETS IN THE CUBAN INSURGENT WAR.

CAPT. E. C. POEY, U. S. V., was a brigade surgeon in the Cuban army, and afterwards a medical officer of the United States army in Cuba, the United States and the Philippines. He remarks that a ricochet shot is more injurious than a straight shot, and believes that in any shot wound the less surgical interference the better. The Mauser bullet is the most humane and the Krag is the next; the stopping power of both is *nil*. He has observed a number of cases of spontaneous recovery from abdominal wounds with small caliber bullets, and is an advocate of non-intervention in these as well as other cases.

DISLOCATION OF THE FIRST METATARSAL BONE.

SURGEON HENRY W. SAWTELLE, P. H. and M. H. S., reported a case of direct dislocation of the proximal end downwards and outwards into the plantar arch with a forcing upward and inward of the internal cuneiform. Reduction by manipulation having failed, an incision was made and replacement effected by direct force.

EARLY RADICAL TREATMENT IN ADENITIS INGUINALIS.

ASSISTANT SURGEON R. L. SUTTON, U. S. N., advocated prompt extirpation by the knife as a means of expediting recovery from inguinal adenitis, often so prolonged and intractable a cause of absence from a soldier's or sailor's duty. He gave a table of ten cases showing the rapid result of the treatment.

TREATMENT OF ANTERIOR DISLOCATION OF THE SHOULDER.

ASSISTANT SURGEON-GEN. G. TULLY VAUGHAN, P. H. and M. H. S., recommended the following methods in the order given: (1) Direct reposition. (2) Extension and counter-extension. (3) Kocher's method. (4) Arthrotomy — and related a case in which all were successively employed, free opening finally showing that reduction had been provided by a detached greater tuberosity; reduction was then easily effected by pressure in the axilla with adduction of the arm.

SUBDURAL HEMORRHAGE WITHOUT FRACTURE.

SURGEON F. W. F. WIEBER, U. S. N., reported a case of football injury in a midshipman at the Naval Academy. Intracranial clot and irritation over the motor area on the left side of the brain was diagnosed, and the brain exposed at the point located, verifying the diagnosis. The clot was removed, and the patient made a rapid and complete recovery. The operation was indicated because: (1) the epileptic symptoms were on the increase; (2) it was feared that the respiratory muscles would become seriously involved; and (3) absorption of the clot might have been imperfect and permanent epilepsy might have become established.

THE INTEROCEANIC CANAL.

The following resolutions were presented by LIEUT.-COL. J. K. WEAVER, Pennsylvania, and unanimously adopted:

Whereas, It is well known that the previous excavations for an isthmian canal have been attended with a large amount of illness and a heavy mortality due mainly to malaria and yellow fever, and

Whereas, Recent discoveries as to the cause of these diseases have enabled medical officers to control their ravages to a marked degree, and

Whereas, The success which has crowned medical efforts in Cuba in abolishing yellow fever in the island, almost banishing malaria from Havana and entirely eradicating malaria as a factor of the death-rate of the army in Cuba, is conclusive evidence that, if proper hygienic precautions are taken at Panama and other situations along the route of the projected interoceanic canal, the death-rate of the past can be diminished and practically made to disappear; therefore be it

Resolved, That in the judgment of the Association of Military Surgeons of the United States, in annual meeting assembled, the amplest power should be given to the medical officers in charge of the sanitation of the canal, and that, to attain this end, the medical officer in charge should be a member of the commission which the President of the United States is authorized to appoint to conduct the affairs of the canal; and be it further

Resolved, That the secretary of the association is instructed to forward this preamble and resolutions, properly attested, to the President of the United States.

THE INTERNATIONAL MEDICAL CONGRESS.

GEN. J. D. GRIFFITH, N. G., Missouri, made an interesting report on the International Medical Congress at Madrid, at which he was an accredited delegate from the association.

INCORPORATION BY CONGRESS.

The Committee on Incorporation announced, through its chairman, MAJOR W. C. BORDEN, U. S. A., that the association was incorporated by Act of Congress approved Jan. 30, 1903, and the association then proceeded to reorganize under the law. The act, among other things, officially recognized the insignia of the association and authorized it to be worn with the uniform.

OFFICERS AND PLACE OF MEETING FOR 1904.

The following were elected officers for the ensuing year: President, MEDICAL DIRECTOR JOHN C. WISE, of the United States Navy; First Vice-President, SURGEON-GENERAL WALTER WYMAN of the United States Public Health and Marine Hospital Service; Second Vice-President, MAJOR ALBERT H. BRIGGS of New York; Third Vice-President, GEN. ROBERT M. O'REILLY of the United States Army; Secretary and Editor, MAJOR JAMES EVELYN PILCHER of the army; Treasurer, MAJOR HERBERT A. ARNOLD, Pennsylvania. St. Louis was selected as the place of meeting for 1904, provided that suitable accommodations can be furnished.

Recent Literature.

Disease of the Pancreas: Its Cause and Nature. By EUGENE L. OPIE, M.D., Associate in Pathology in the Johns Hopkins University, Fellow of the Rockefeller Institute of Medical Research. Philadelphia and London: J. B. Lippincott Company. 1903.

In the list of names of those identified with the study of the pathology of the pancreas a conspicuous place is occupied by that of Opie, and the volume now under consideration gives ample evidence of the breadth and thoroughness of his work. The studies of the anatomy of the pancreas are noteworthy, since they include the results of the dissection of one hundred specimens with reference to the number and course of the ducts and to the presence of accessory pancreatic tissue. The importance of this inquiry is apparent when it is recognized that conclusions from experiments on the pancreas must be controlled by evidence that in the experiments concerned attention was directed to the possibility of accessory ducts and of detached foci of pancreatic tissue.

Opie's investigations with regard to the function and lesions of the islands of Langerhans make his assertion almost conclusive when he states that considerably more than one half of all cases of diabetes are due to injury of these islands.

The title of the book sufficiently indicates its scope. Without being a comprehensive treatise on diseases of the pancreas, it includes the consideration of some of the most important affections of this organ. It shows how they arise, what are the resulting disturbances, and gives evidence of value in their diagnosis, prognosis and treatment. The volume is of value to every student of pancreatic disease and will interest both physician and surgeon. It is gratifying to learn that the Rockefeller Institute of Medical Research aided the completion of the work.

A Textbook of Histology and Microscopic Anatomy of the Human Body, including Microscopic Technique. By DR. LADISLAUS SZYMONOWICZ. Translated and edited by JOHN BRUCE MACCALLUM. Illustrated with 277 engravings, including 57 plates in colors and monochrome. 8vo, pp. 435. Philadelphia: Lea Brothers. 1902.

In default of American textbooks of histology, we have come to rely mainly upon translations of German manuals of the science, two of which have already won general recognition for themselves. The new candidate for favor is really the most condensed and briefest work we have had, although it forms a bulky and heavy volume, being in large type and printed on heavy paper, so that it appears more than twice the size of Schäfer's "Essentials of Histology," although containing much less matter. It has two special merits — one the excellence of the illustrations, which have for the most part been specially prepared for the work, the other the incorporation of many of the results of researches carried on in Professor Mall's laboratory in Baltimore, researches which have failed to receive the recognition they deserve. Very scant attention is given to other American work. Neither the author nor the editor shows a thorough mastery of the subject, although both have a sound knowledge of histology, so that while they have produced a textbook which will prove acceptable to students, they have not produced an authoritative manual of reference for advanced workers, because they have left many recent investigations unheeded,— such as those on the vitreous body, of Mingazzini on the intestinal epithelium, those on the circulation of the liver, on the structure of the placenta, etc. Students will appreciate the clear statement of the facts by the author and the idiomatic excellence of the translation by the editor, and we must all admire especially the beauty of the colored illustrations, which have been wisely chosen to show features less well to be demonstrated by mere black and white figures. The closing chapter on technique seems to the reviewer unsatisfactory. There is a good index.

The Medical and Surgical Uses of Electricity. By A. D. ROCKWELL, A.M., M.D. New [tenth] edition. 8vo, pp. xvi, 656, with two hundred and fifty-two illustrations. New York: E. B. Treat & Co. 1903.

In this new edition of a well-known book, chapters have been added on the x-ray, the Finsen light, vibratory therapeutics and high-frequency currents, and other chapters have been revised. The revision, however, is merely an example of putting new cloth into a very old garment which has outlived its usefulness.

Mechanical Vibratory Stimulation. Its Theory and Application in the Treatment of Disease. By MAURICE F. PILGRIM, M.D., First Vice-President of the American Electro-Therapeutic Association, etc. New York: The Lawrence Press.

The aim of the author in this small book of 152 pages is to indicate the therapeutic value of mechanical vibration, to establish a rational basis for this type of treatment and to make the method available to the practitioner. The result is a carefully written and well-illustrated book, which should at least call attention to this little-practiced form of treatment.

THE SPITTING NUISANCE IN PHILADELPHIA. — A vigorous attempt is being made in Philadelphia to abate the spitting nuisance, through frequent arrests. A few public examples should do much toward the abatement of this widespread habit. The mere exhibition of prohibition notices has been proved to be of small avail.

THE BOSTON

Medical and Surgical Journal

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SPOTTED FEVER.

WE have previously alluded somewhat briefly to the work which has been done in the study of so-called spotted fever of the Rocky Mountains. The general importance of the subject, and the very great interest attaching to disease transmitted as this appears to be, justify a somewhat more extended statement of the course of the work and the preliminary conclusions which those engaged in it have reached. The detailed account of the work appears in the first biennial report of the Montana State Board of Health. It is worthy of note that so unusual a piece of investigation should have inaugurated the publication of this report. As is perhaps generally known, the work of investigating the disease has fallen to the lot of Dr. Louis B. Wilson and Dr. William M. Chowning, both connected with the Minnesota State University in the capacity of pathologists.

Soon after the organization of the State Board of Health of Montana, the desirability of investigating a peculiar localized disease of the Bitter Root Valley, known in that locality as spotted fever, became apparent. The supposed causes — water, conditions of the soil, snow from the Bitter Root Mountains and various local conditions — were soon proved insufficient to explain the incidence of the disease. In view of the fatality of the affection, its curious localization in a particular valley, and the general interest attaching to an apparently new disease, the physicians we have mentioned were chosen systematically to prosecute the research. The investigation has now been in progress upwards of a year, and certain conclusions, although acknowledged to be preliminary, seem to be of much practical and theoretical importance.

It was found that the first case of spotted fever in the Bitter Root Valley occurred in 1873, when there were but few white men resident there. It apparently had not occurred among the Indians, who continued to inhabit the valley until 1890. Since its appearance about two hundred cases of the severer form of the disease have occurred, with a mortality of 70 to 80%. Through the co-operation of the physicians of Western Montana a table has been drawn up including 114 cases, with a more or less complete clinical history, showing the important points connected with the course and outcome of the affection. It has been found that the disease is confined to the Bitter Root Valley in an area from four to ten miles by fifty miles long. It is doubtful whether any cases have originated outside of this territory, excepting eight in a small valley twenty miles east of the Bitter Root Valley. The practical limitation of cases to the west side of the valley is also strikingly shown by the investigations. The population of the valley is largely made up of ranchers, who are, as a rule, cleanly in habits and healthy. The greatest number of cases have occurred in May and June, and but little importance can be attached to the general health of the patient in determining his susceptibility to the disease. Age apparently, apart from other considerations, plays little part in predisposing to the disease. The onset of the affection is characterized by elevation of temperature, a generalized eruption beginning on the abdomen and gradually extending to other parts of the body, hence the name "spotted fever." In general, in the more serious cases, the disease runs the course of a highly acute infection with cutaneous manifestations.

During their stay in the valley Drs. Wilson and Chowning were able to perform a number of autopsies, the details of which are carefully registered in the report before us. The histological study of these cases showed fairly constant, but not altogether characteristic, appearances. Enlargement of the spleen and general congestions were noted, and in all cases small wounds of the skin were observed, due to tick bites. Various bacteria were found in careful routine examination, which did not tend to throw much light on the disease. A most thorough study of the blood was made and confirmatory experimental work done. From these various sources of information it was finally determined that

in all probability the disease was due to a hematozoön, of which the normal host was the gray gopher, indigenous and abundant in that region. The animal is averse to swimming, hence its practical limitation to one side of the river which runs through the valley. Early in the spring the gopher is said to harbor large numbers of ticks, which apparently later in the season is not the case. Of forty-three gophers examined, nine showed within their blood cells hematozoa, which were indistinguishable from the hematozoa found in patients suffering from spotted fever. Gophers examined from the unaffected side of the valley did not disclose similar hematozoa.

The general conclusion reached by this investigation is that in all probability the curious disease under consideration is due to an organism which has as its host the gray gopher, and which is transmitted to man through the bite of the tick. The writers naturally recognize that their work is as yet in a somewhat formative stage, and that further research must be undertaken before their ingenious hypothesis may be definitely established. Experience in other diseases, however, would lead to the assumption that the hypothesis, reinforced by the evidence already at command, is an extremely likely one. They insist that ticks must be most carefully studied ; and particularly those on the west side of the Bitter Root Valley, which have actually bitten persons, should be preserved and identified. In general, the problem is one which already has its analogies, but we cannot too highly commend the scientific spirit in which it has been carried out and the positive addition to knowledge which the substantiation of the hypothesis will bring.

A DAILY MEDICAL JOURNAL.

IT is announced, as stated in our issue for last week, that a medical periodical, to be known as *The Daily Medical Journal*, is to be published, beginning the first of October. The last few years have seen many changes in medical journalism, particularly in this country. Journals have multiplied beyond the demand. Many of the older established periodicals have increased the number of their reading pages, and the general medical activity of the times has been adequately reflected in the various weekly and monthly medical journals. In view of these facts we are not altogether surprised to be brought face to face with a daily medical journal. The need of such a journal, so far as the further development of medical science is concerned, is not in the least apparent, but we suspect, from the statement which has been published, that the object of this new periodical is not purely medical and is not designed solely to further the needs of medical science.

If the statement published in our issue of last week be correct, it is evident that other motives than those ordinarily accepted in the best medical journalism are at work. This we regret. Possibly it is a sign of the times, but it is nevertheless to be deplored that within the last few years a certain departure from the recognized standards of medical publication, which had hitherto prevailed and been accepted, has occurred. We are quite convinced that there is not sufficient medical news of vital interest to the profession to justify a daily publication; nevertheless we shall await with interest this new venture in medical journalism.

LEGISLATION AGAINST THE TOY PISTOL.

EACH succeeding year sees the usual number of casualties resulting from the use of the toy pistol during the weeks about the Fourth of July. There has from time to time been a somewhat lukewarm effort to abate not only the nuisance which such pseudo-firearms produce, but also to check the positive mortality which inevitably results from their free use in the hands of the young. Noise may possibly be a necessity to be indulged in and condoned once yearly, but we certainly have not the right to condone also the really alarming death rate which apparently is an inevitable accompaniment.

We are glad, therefore, to note that the city of St. Paul has shown a disposition to attack the problem seriously through restrictive legislation. It is reported that the corporation attorney has drafted an ordinance which prohibits on the Fourth of July, and it is to be hoped on other occasions as well, the use of blank cartridges and pistols. The ordinance is designed not only to prohibit their use, but also to hold dealers responsible for carrying them in stock a month previous to July Fourth, infringement of the ordinance being punishable by fines.

It is needless to say that such local legislation can have but small effect upon the generally recognized evil, but it is none the less necessary that a beginning should somewhere be made in passing laws of so stringent a character that

evasion will no longer be attempted, and dealers in such objects will be prevented from exposing them for sale. No doubt if the suggested ordinance is a success in St. Paul, it will be adopted by other cities, so that in time the toy pistol will be tabooed in the same sense that violent explosives and, to a less extent, gunpowder are in the hands of the irresponsible. We see no other way than such widespread public sentiment, finding expression in law, to check the yearly harvest of tetanus, which is becoming increasingly menacing. It should certainly be the work of public-spirited physicians everywhere to urge such legislation.

MEDICAL NOTES.

TYPHOID FEVER IN PITTSBURG. — Pittsburg for some time has been suffering from an epidemic of typhoid fever, which still continues. The water supply of the city is held to be responsible for the disease, which has numbered as many as a hundred victims a week, at least during some weeks of the epidemic.

ABOLITION OF RIVER BATHS. — According to a statement in the *Medical News*, President Lederle of the New York Department of Health has expressed himself in favor of the abolition of free municipal baths along the river fronts, on the ground that a certain amount of infectious disease is contracted through their use and that they therefore are a public menace. The question of doing away with the river baths, which are often polluted, and substituting plunges and shower baths, is now under consideration by the Board of Health.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Aug. 12, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 20, scarlatina 20, typhoid fever 16, measles 36, smallpox 0.

IMPROVEMENTS AT THE BOSTON CITY HOSPITAL. — It is stated that a heating plant of an approximate cost of $12,000 is to be installed at the Boston City Hospital to provide for the South Department.

SMALLPOX IN WAREHAM, MASS. — It is reported that three extremely mild cases of smallpox have appeared at Wareham, two in children and one in an adult, the disease presumably having been brought from a distance. The patients are not seriously ill, and there is apparently absolutely no reason to dread any extension of the disease. Quarantine precautions have been taken.

PAVING OF ALLEYWAYS. — The Boston Board of Health has recently taken action under the act providing that the surface of any private passageway shall be paved or otherwise rendered sanitary at the owner's expense. A number of alleyways have been condemned as nuisances and orders have been issued to have them properly paved and drained, the expense to be borne by the owners and not by the city.

NEW YORK.

A SMALL INFANT. — There was recently admitted and placed in an incubator at the New York Post-Graduate Hospital a male infant which weighed only thirteen ounces, which is stated to be the smallest child ever met with there.

YELLOW FEVER ON A STEAMSHIP. — On the steamship *Basil* of the Booth Line, which arrived at quarantine on Aug. 1, four seamen died from yellow fever after the vessel left Para.

THE CARE OF SMALLPOX PATIENTS. — In a case recently decided in the Fourth Appellate Division of the New York Supreme Court the opinion was given, through the presiding justice, that it is the undoubted duty of a town board of health to take immediate and efficient steps, when smallpox develops within its jurisdiction, not only to furnish care and attendance to persons suffering from the disease, but to protect, as far as possible, the residents of the town from the danger to which they are exposed by reason of its contagious and malignant character. To this end the board of health is authorized to incur any reasonable expense, and the expense thus incurred becomes a charge upon the town. The court therefore held that when the health officer of the town, acting under the authority of the town board of health, orally employs a physician to treat and care for all patients who are then, or might thereafter be, affected with smallpox, assuring the physician that he would be well paid for his services, the town is liable to such physician for the reasonable value of the services rendered by him.

A CASE OF POSSIBLE POTASSIUM CYANIDE POISONING. — A remarkable case is reported from the Eastern District Hospital, Brooklyn. A man thirty-four years old, who is stated to have been deaf and dumb from birth, and who was found unconscious in his room by his

father, was admitted in a state of coma, in which he remained for many hours. It was thought that perhaps the patient had been poisoned by illuminating gas, but this was emphatically denied by the family, and the diagnosis remained obscure until he recovered consciousness, when, if the newspaper accounts are to be accepted, the man actually began to talk, and stated that he had inhaled the fumes of potassium cyanide, with which he was cleaning a bed.

NEW YORK HEALTH DEPARTMENT REPORT. — The weekly reports of the New York Health Department for the month of July show an annual death rate of 19.06 as against 16.54 in June and 21.35 in July, 1902. The corrected death-rate, excluding non-residents and infants under one week old, was 18.71. Among the diseases in which there was a decline in mortality were the following: The weekly average of deaths from diphtheria and croup decreased from 49 in June to 36¾ in July; of deaths from scarlet fever, from 19¾ to 11¾; from whooping-cough, from 7¼ to 4; from pneumonia, from 84½ to 58¾; from broncho-pneumonia, from 52¼ to 47; from acute bronchitis, from 20½ to 13¾; and from pulmonary tuberculosis, from 139¼ to 125¼. Among the diseases showing an increased mortality were the following: The weekly average of deaths from diarrheal diseases increased from 84¼ to 301¼; from diarrhea under two years of age, from 82¼ to 297¾; from typhoid fever, from 7½ to 13¾; from cancer, from 46¾ to 50½; from Bright's disease and nephritis, from 93½ to 95¾; and from organic diseases of the heart, from 87 to 98½. Although there was naturally a considerable increase in the mortality from diarrheal diseases, the number of deaths is smaller than the average for the season, and in the last week of July there were 274 in children under two years, as against 340 in the corresponding week of last year. During the month 1 death was reported from influenza, as against 5 in June.

Correspondence.

NURSING AS A PROFESSION.

BOSTON, Aug. 6, 1903.

MR. EDITOR: I am much interested in the subject of your editorial of July 30, upon "Nursing as a Profession."

Not long since you published a short address made by me to a graduating class of nurses, in which I pointed out to them that it lay with them to choose whether they should practice nursing as a calling, contenting themselves with carrying out what they had learned during their novitiate and applying it to the sick under their care, or whether they should regard their previous training merely as a preparation for further constant study and effort to widen their horizon.

I stated that if they chose the latter view and continued through life their search after knowledge, they elevated their nursing to the dignity of a learned profession

A profession has been defined by good authority as "an employment requiring a learned education."

Applying this definition strictly, a young woman graduated at one of our better training schools may properly claim that she is educated for a profession. Graduation from such a school indicates that after obtaining a good "common school" education she has devoted three years to special studies applying to her future employment.

It seems to me, however, that a man or woman claiming to *practice* a liberal profession should be able to show that they are exercising their calling in a progressive spirit that is constantly carrying them forward and is keeping their minds open and receptive.

This spirit is what keeps a profession liberal, and a nurse having this spirit, coupled with sufficient education to properly direct it, is engaged in a liberal profession; while a physician or lawyer lacking this aspiration and disposition of mind may properly be regarded as merely following a calling, even though his education fitted him for a liberal profession.

When the education provided for the trained nurse finds or inspires this proper disposition and energy of mind in a good proportion of its students we shall find that nursing exists as a profession whether we wish to acknowledge it or not.

It remains for the trained nurse to bring the public to an appreciation of the professional worth of her calling by herself making it a profession. There are many individuals who are accomplishing this in the best way, but a full recognition of the high position of the nursing art will be won only when the majority of those practicing it adopt these advanced standards and act up to them.

Just what the limitations of this nursing profession will be, and what its proper relation to the medical profession, time will show.

Respectfully yours,

ARTHUR T. CABOT.

ARLINGTON HEIGHTS, MASS.,
Aug. 6, 1903.

MR. EDITOR: We have been much interested in the discussion going on in your JOURNAL regarding nursing as a profession, because we have the past year been training young women for the care of chronic cases, having found it almost impossible to obtain nurses competent for this work. "A profession must be capable of progress" (from a letter in your issue of July 16).

Along what lines could nursing progress except those which constitute a medical education?

Nurses might be taught more of anatomy and physiology, of dietetics and hygiene, of mechano-, hydro- and electro-therapeutics, etc.; but would they then be nurses? Suppose a person to be versed in all the branches of nursing which do now or might in the future be supposed to constitute an educated nurse, would it then be legitimate for that person to take the initiative in the care of the critically ill? If so, what would be the position of the physician? Possibly, that of consultant, as you suggested. But would not the person become the physician and be no longer the nurse? And is it not contrary to all good teaching of to-day for a nurse to prescribe or take the responsibility of the case unaided? Even the midwife assumes her charge through ignorance, and we would look askance at a trained nurse who took such a liberty.

We must feel that there can be only one profession whose duty it is to administer to the sick, and that the profession of medicine; and that nursing is a subdivision of this profession, its special function being "to take care of the physicial and mental wants of the sick under the direct supervision of the physician."

Yours truly,

ARTHUR HALLAM RING

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 1, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Scarlet fever.
New York	3,785,156	1,363	601	38.71	8.04	2.80	21.82	.59
Chicago	1,885,000	596	200	35.54	7.87	.98	23.90	.59
Philadelphia	1,378,527	485	168	32.16	5.13	1.03	14.02	.82
St. Louis	618,481	—	—	—	—	—	—	—
Baltimore	533,712	208	85	36.54	4.80	.48	15.86	1.92
Cleveland	427,731	—	—	—	—	—	—	—
Buffalo	387,904	—	—	—	—	—	—	—
Pittsburg	351,745	149	—	44.96	8.72	3.48	28.19	2.01
Cincinnati	335,140	—	—	—	—	—	—	—
Milwaukee	315,307	—	—	—	—	—	—	—
Washington	295,103	—	—	—	—	—	—	—
Providence	191,230	96	41	54.13	6.24	2.08	39.56	1.04
Boston	603,163	205	78	38.04	8.29	2.43	18.05	.97
Worcester	132,044	47	30	34.03	8.51	—	25.52	—
Fall River	115,549	47	29	48.92	6.38	2.12	42.54	2.12
Lowell	101,959	64	48	53.10	1.56	1.56	45.30	—
Cambridge	98,639	35	15	45.71	2.86	—	31.42	—
Lynn	72,497	18	7	5.55	—	—	—	—
Lawrence	69,766	33	20	51.51	—	3.03	45.45	—
Springfield	69,389	19	5	26.31	5.26	—	10.52	—
Somerville	68,110	20	8	5.00	—	5.00	—	—
New Bedford	67,198	48	28	56.24	6.25	2.08	37.49	8.32
Holyoke	49,286	—	—	—	—	—	—	—
Brockton	44,873	10	3	20.00	—	—	—	—
Haverhill	42,104	11	2	27.27	—	—	—	—
Newton	37,794	7	2	14.30	28.60	—	14.30	—
Salem	36,876	14	3	—	—	—	—	—
Malden	36,286	16	4	6.25	—	—	6.25	—
Chelsea	35,876	10	4	10.00	—	—	—	—
Fitchburg	35,069	9	5	11.11	—	—	—	—
Taunton	33,656	14	6	35.70	—	—	28.56	—
Everett	28,620	8	4	62.50	—	—	50.00	—
North Adams	27,862	14	9	64.26	—	—	57.12	7.14
Gloucester	26,121	5	1	—	—	—	—	—
Quincy	26,042	9	3	33.33	—	—	11.11	—
Waltham	25,198	6	2	16.67	16.67	—	—	—
Brookline	22,608	5	2	—	—	—	—	—
Pittsfield	22,589	6	3	16.67	—	—	16.67	—
Chicopee	21,031	11	10	72.72	9.09	—	54.54	9.09
Medford	20,962	7	3	14.30	28.60	—	—	—
Northampton	19,883	8	2	12.50	—	—	—	—
Beverly	15,302	6	1	66.67	—	—	—	—
Clinton	15,161	3	0	33.33	—	—	—	—
Leominster	14,806	—	—	—	—	—	—	—
Newburyport	14,478	2	1	50.00	—	50.00	—	—
Woburn	14,300	—	—	—	—	—	—	—
Hyde Park	14,175	6	4	33.33	—	—	16.67	—
Adams	13,745	5	—	40.00	—	20.00	—	—
Attleboro	13,677	—	—	—	—	—	—	—
Marlboro	13,609	6	3	50.00	16.67	—	33.33	—
Melrose	13,600	3	—	—	—	—	—	—
Westfield	13,418	6	3	16.67	16.67	—	—	—
Milford	13,139	—	—	—	—	—	—	—
Revere	12,722	6	4	33.33	—	—	16.67	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody	12,179	—	—	—	—	—	—	—
Gardner	11,928	—	—	—	—	—	—	—
Weymouth	11,344	4	0	25.00	25.00	—	—	—
Southbridge	11,268	4	1	50.00	25.00	—	25.00	—
Watertown	11,077	3	2	—	—	—	—	—
Plymouth	10,780	—	—	—	—	—	—	—

Deaths reported, 3,387; under five years of age, 1,450; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,337, acute lung diseases 243, consumption 243, scarlet fever 32, whooping cough 26, cerebrospinal meningitis 8, smallpox 6, erysipelas 3, measles 30, typhoid fever 55, diarrheal diseases 773, diphtheria and croup 68.

From whooping cough, New York 4, Chicago 1, Philadelphia 7, Baltimore 2, Pittsburg 1, Providence 1, Boston 1, Lowell 3, and Lawrence, New Bedford, Brockton, Haverhill, Fitchburg and Revere 1 each. From erysipelas, New York 2, Chicago 1. From smallpox, Philadelphia 3, Pittsburg 2, Fall River 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending July 18, the death-rate was 13.5. Deaths reported, 3,894; acute diseases of the respiratory organs (London) 115, whooping cough 86, diphtheria 49, measles 95, smallpox 6, scarlet fever 31.

The death-rate ranged from 5.4 in Bury to 22.6 in Wigan; London 13.0, West Ham 11.3, Brighton 10.0, Portsmouth 13.6, Southampton 13.3, Plymouth 14.0, Bristol 12.5, Birmingham 14.1, Leicester 9.7, Nottingham 14.6, Bolton 18.6, Manchester 17.8, Salford 15.0, Bradford 12.7, Leeds 15.5, Hull 11.1, Newcastle-on-Tyne 17.6, Cardiff 10.9, Rhondda, 15.7, Liverpool 18.0, Smethwick 8.0.

METEOROLOGICAL RECORD.

For the week ending Aug. 1, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. 26	29.80	75	83	67	72	62	67	W	N W	12	12	O.	C.	.20
M 27	29.92	64	70	57	49	61	55	N W	N W	15	15	C.	C.	0
T. 28	30.04	65	74	56	63	48	56	N W	S W	9	5	F.	F.	0
W. 29	29.90	70	78	62	70	82	76	S	S W	12	24	F.	O.	T.
T. 30	29.78	80	90	70	86	91	88	S W	W	8	8	F.	O.	.56
F. 31	29.98	70	76	63	67	88	78	W	W	10	5	C.	O.	.62
S. 1	30.27	68	78	58	58	49	54	N	N W	6	5	C.	F.	0
☞	29.96		78	62			68							.78

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING AUG. 8, 1903.

L. W. SPRATLING, surgeon, C. H. DELANCY and E. M. BLACKWELL, assistant surgeons. Detached from the "Columbia" and ordered to the "Hancock."

C. E. REYNOLDS, pharmacist. Detached from the "Columbia" and ordered to the "Hancock."

H. L. BROWN, assistant surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and ordered to the Navy Yard, Washington, D. C.

K. OHNESORG and J. T. KENNEDY, assistant surgeons. Ordered to the Naval Academy.

C. T. GRAYSON, acting assistant surgeon. Ordered to the Naval Proving Ground, Indian Head, Md.

J. COWAN, pharmacist. Detached from the Navy Yard, Boston, Mass., and ordered to the Naval Magazine, Iona Island, N. Y.

E. T. MORSE, pharmacist. Detached from the Naval Magazine, Iona Island, N. Y., and ordered to the Navy Yard, Boston.

E. MAY, pharmacist. Ordered to the Naval Hospital, Norfolk, Va.

J. A. GUTHRIE, passed assistant surgeon. Detached from the "Vicksburg" and ordered to the "Solace."

R. H. MICHELS, assistant surgeon. Detached from the "Solace" and ordered to the "Wilmington."

G. M. MAYERS, assistant surgeon. Detached from the "Isla de Cuba" and ordered to the "Vicksburg."

RESIGNATION.

DR. EDGAR GARCEAU has resigned the position of surgeon to out-patients at the Free Hospital for Women, Boston.

RECENT DEATH.

GEORGE W. ROLERFORT, M.D., a well-known negro physician of Newark, N.J., has died at the age of forty-three. At the time of his death he was officially in charge of the Newark Almshouse and had a considerable reputation also as a politician. He was born in Virginia, was graduated in the Medical Department of Shaw University in 1890, thereafter studying at the University of Pennsylvania Hospital in Philadelphia. He was a member of various medical societies and was well thought of by his colleagues.

BOOKS AND PAMPHLETS RECEIVED.

A Nurse's Handbook of Obstetrics, for use in Training-Schools. By Joseph Brown Cooke, M.D. Illustrated. Philadelphia and London: J. B. Lippincott Company. 1903.

Hyoscine in the Treatment of Morphinism. By T. D. Crothers, M.D., Hartford, Conn. Reprint. 1903.

The Exact Science of Health Based upon Life's Great Law. By Robert Walter, M.D. Vol. I. New York: Edgar S. Werner Publishing Company; London: Kegan Paul, Trench, Trübner & Co., Ltd. 1903.

The Principles of Obstetrics, a Practical Manual for the Student and General Practitioner. By Stanley Perkins Warren, M.D. Illustrated. New York: William Wood & Co. 1903.

Addresses.

MEMORIAL MEETING TO MORRILL WYMAN, M.D.

ADDRESSES BEFORE THE CAMBRIDGE MEDICAL IMPROVEMENT SOCIETY AT A MEETING HELD AT THE COLONIAL CLUB, CAMBRIDGE, MARCH 23, 1903.

HENRY P. WALCOTT, M.D., CAMBRIDGE, MASS.

I HAVE lately been looking over the work upon which Dr. Wyman had busied himself during the last year or more of his life — a memoir of Dr. William J. Walker. The reasons he gives for undertaking the work are thus stated: "Dr. Walker was a man of great and varied abilities; he was my father's friend; he was my friend and benefactor. I cherish his memory as a sacred trust; and as my medical father, would hold towards him the true spirit of the oath of Hippocrates." To some of us these words come home with special meaning, for we were pupils of Morrill Wyman, and know that the Hippocratic oath and the law were to him as sacred things. To all here he was teacher, friend or example of the good and wise physician. Born at Chelmsford on July 25, 1812, he died at his home in Cambridge on Jan. 30, 1903. He was the second son of Rufus Wyman and Anne Morrill. With his younger brother, Jeffries, he was prepared for college at Phillips Exeter Academy. Both entered Harvard and were graduated with the class of 1833. The class of 1833 was a noted one. It gave six professors and four overseers to Harvard University and a president and four professors to other institutions of learning. This intimate association of the brothers lasted through life, and until Jeffries Wyman's death in 1874, the brothers were never far apart, and each exercised a strong influence upon the other.

Rufus Wyman, graduate of Harvard College in 1799, was a favorite pupil of Dr. John Jeffries of Boston. Resisting a flattering invitation from his teacher to establish himself in Boston, he settled in the town of Chelmsford and began the practice of medicine. His abilities were soon recognized, and he gained a reputation which extended far beyond the limits of the town. He was chosen in 1817 to be the head of the McLean Asylum for the Insane. After a most faithful and successful service there of seventeen years, he resigned his place and passed the rest of his life in Roxbury, where he died in 1842. He was president of the Massachusetts Medical Society, and universally respected. It is not easy now to realize what a task Rufus Wyman undertook. One of the greatest of his successors, Luther V. Bell, uses these words: "Entering on his duties with no similar undertaking for an exemplar to guide him in interior arrangements or general management, the weight of difficulty and responsibility which necessarily fell upon him must have been far greater than any of his successors in such trusts, who have had the aids of his ingenuity and labor, can have experienced. What is due to his memory as a public benefactor can never be realized or appreciated, except by the small number whose opportunities and duties enable them to judge of the difficulties he encountered and the measures he projected to meet them." Dr. Bell also adds: "There was in his character not only this strict integrity, but a hatred of ostentation, an avoidance of anything that could be construed into self-laudation, which was carried perhaps to an extreme actually prejudicial. He had such a dislike to newspaper notoriety, such distrust of any form of reputation higher with the public than with his professional brethren, the sole adequate judges of character in a medical man, that perhaps the light of his good works was too much hidden under a bushel to serve its proper end as an example." Forty years later Lowell wrote of the younger Wyman: "The wisest man could ask no more of fate

> "Than to be simple, modest, manly, true;
> Safe from the many; honored by the few;"

and later still, in his own extreme need, experienced from the elder brother, then seventy-nine years old, a devotion and tender care which he did not tire of commemorating in his letters to his friends.

Brought up in such surroundings, the brothers naturally turned to the study of medicine, but not until Morrill had spent several months as a member of a party of engineers who were employed in laying out the route of the Boston & Worcester Railroad. This experience was one that he was fond of reverting to, and nothing pleased him more in later life than to get out his surveying apparatus and show that he had not lost the skill acquired in the occupations of his youth. Under the direction of his father and his father's friend, William J. Walker of Charlestown, he began the study of medicine, and received his medical degree in 1837. Dr. Walker, a graduate of Harvard College in 1810, had had also the advantages of a medical education in France and England during the years when Corvisart, Pinel, Laennec, Dupuytren taught in the one capital and Sir Astley Cooper in the other. Walker's success in his profession was great, and until he suddenly abandoned his practice in 1846 he was one of the leading surgeons of the state. Whatever may have been Walker's failings in any other direction, his relations to his favorite pupil were such that the latter cherished for him an admiration and devotion that never wavered.

For a year Wyman was house physician in the Massachusetts General Hospital, where he had the good fortune, never forgotten, of serving under James Jackson, "the model of the good and wise physician," and Jacob Bigelow, "the most accomplished man of our profession." The house surgeon of the year was Samuel Parkman, an intimate and much-loved friend, whose death in the prime of early manhood took from our profession one of its brightest ornaments. Upon leaving the hospital, he at once established himself in Cambridge, and remained

here to the end. The struggle which the young physician usually has in the first years of his practice to make both ends meet was not his. Prudent habits, an indomitable industry, the family name, an engaging presence, the good will of the leaders of his profession, which he had fairly earned,— all these stood him in good stead, and he never had from the beginning any reason to be anxious about his money affairs, nor, indeed, did he ever pay much attention to them. He had all the qualities which make successful men of affairs, and he might have rivaled the wealth of Walker; but his ambition never led him in that direction. Throughout his life he was indifferent to the luxuries which money could procure. The utmost simplicity pleased him best, and his property grew because he had a large income and did not waste it. The investment of it never occupied much of his attention. He was generous, but he was too frugal in his own habits not to demand the same care of others. He was one of the large contributors to the Cambridge Hospital, and many a house in this city cherishes the memory of the silent benefactor, who also gave them something far beyond the perfunctory contributions of money which often pass for charity. Though his early professional life was a busy one, he found time to compete for the Boylston Medical Prize, which he received in 1846 for an essay on ventilation. This was published in the same year, increased to a volume of 400 pages. It is a thoroughly original treatise, illustrated by a number of original experiments. Dr. Billings, one of the best authorities upon the subject, says of this book that it is one of the most valuable that we have; that it states the general principles of ventilation in a clear, concise style and in a form which as a manual of instruction for the ordinary reader can hardly be surpassed, and is one of the few books on heating and ventilation which advocates no patent or proprietary apparatus. One of the most valuable and extensive series of experiments upon the effect of various forms of outlet cowls for chimneys was made by a committee appointed for that purpose by the American Academy of Arts and Sciences. The report of this committee was prepared by Dr. Wyman, and will be found in the proceedings of the Academy for 1848. It is still quoted in the best treatises upon heating and ventilation. The interest which he thus early showed in a subject of prime importance to both the sick and the well remained with him through life. A few weeks only before his death he was busy measuring with his Casella anemometer the air currents in the basement of the Cambridge Hospital. For years he was consulted upon all important questions of ventilation in this vicinity, and probably nothing could distress him more than some violation of the principles of ventilation, for which some might wrongly suppose him to be responsible.

At a later day he again entered the field as a competitor for a prize offered by the Massachusetts Medical Society, and made possible by the liberality of one of its fellows. The prize was for an essay which should describe in plain language an effective and ready method of ventilating sick-rooms; one that can be put in operation at once at the needed moment, with least difficulty and expense, in houses of ordinary construction. Twenty-six essays were received, and to one marked "X Y Z" the prize was awarded, this having met all the requirements of simplicity, cheapness, effectiveness and readiness of application. "X Y Z" declined to reveal his name and requested that the prize money be expended in the publication of the essay. For those familiar with his language and his methods, the letters were only a thin veil before the man who made it his business at all times to use a phraseology so plain that all might understand it.

This capacity for clear statement made him one of the most effective of expert witnesses in the courts of law; a position, however, which he never sought, and only occupied when he thought some gross act of injustice might be averted by his intervention.

Both his father and mother and other members of his family in his own generation suffered from pulmonary affections. Before 1850, two slight hemorrhages from the lungs warned him that he, too, was in danger. His family and his friends were urgent that he should take some respite from his severe labors. Beyond a short vacation, the first that he had taken since entering upon practice, followed two years later by a few months in Europe, he could not be induced to yield to his own safety, but returned to enter again upon a practice larger than before. An active life of exposure in all weathers, in which he wholly disregarded regularity of habits in eating and sleeping, so far from confirming his malady, seemed to bring him a cure, and he lived to his ninety-first year with fewer apparent disabilities than fall to the lot of the majority of men.

An operation for opening the chest, in order to remove accumulations of fluid there, had been known to medicine from the days of Hippocrates. It was dangerous in execution and uncertain in its results. With the greater knowledge of all diseases of the chest consequent upon the discovery of modern auscultation and percussion, it had seemed to many men that a safer operation than the one in use might be devised. This had not, however, been accomplished. Dr. Wyman had thought much upon the subject, and on the 23d of February, 1850, put into use the simple operation which he had invented. His patient was a lady in Cambridge, suffering much from a collection of fluid in the chest, which showed no tendency to absorption. She was in a critical condition. He called in consultation his friend, Dr. John Homans. It was agreed that the patient's condition was most serious. Dr. Wyman proposed a puncture of the chest. The older physician was reluctant, but finally offered to return to Boston and

to consult with some of his medical brethren upon the subject. Later in the day he returned and announced that though none of his Boston friends could from experience advise it, he was willing to take his share of the responsibility for an operation. Dr. Wyman accordingly punctured the chest with an exploring needle and canula, and drew away twenty ounces of a straw-colored fluid. The patient improved. Two days after the operation she had occasional paroxysms of dyspnea, and at her earnest solicitation the canula and exploring needle was again inserted. This time the canula was fitted to a pump so contrived that fluid was continuously drawn through it without the possibility of the entrance of air. Ten ounces of clear fluid were drawn, with immediate relief to the patient. The recovery was uninterrupted. Dr. H. I. Bowditch had bestowed much thought upon the same problem. He heard with pleasure of his friend's success, and asked him to perform the same operation upon a patient of his in Woburn, who had consulted Dr. Bowditch in similar circumstances to the Cambridge case. Accordingly, on the 17th of April, the second operation of thoracentesis was done and Dr. Bowditch at once recognized its value. With characteristic modesty, Dr. Wyman felt that his task, so far as it related to the general publication of the merits of the new operation, was complete. He knew that his friend would see to it, as he did, that the medical world should be fully acquainted with the discovery. He knew, also, that no credit to which he had a claim would be taken from him, and it would have been an undeserved indignity to both to have even hinted at the possibility of it.

From 1853 to 1856 he was adjunct Hersey Professor of Medicine in Harvard College, for the purpose of relieving Dr. John Ware, whose infirm health required assistance in his duties. During the year of Dr. Ware's absence, Dr. Wyman gave all the instruction in this department. In 1856 he resigned his office. The methods of the medical school of that day do not appear to have been altogether congenial to him, and he was always inclined to be restive under restrictions which did not commend themselves to his reason. But whatever may have been the causes of his early withdrawal from a professorship in which he had been eminently successful, they never led him to lose his interest in the teaching of medicine in the university. In the early part of 1857, in connection with his brother Jeffries, Hersey Professor of Anatomy, Dr. John Ware and Prof. J. P. Cooke, he became a teacher in a school of medicine in Cambridge, he giving the instruction in materia medica and midwifery. The school had a fair measure of success, and a list of students whose names are well and favorably known to-day in many parts of the country. Few schools of this description have contained a more distinguished body of instructors than did this one. Besides the four names above mentioned are those of Profs. Lovering, Gray and Agassiz. When Jeffries Wyman assumed the curatorship of the Peabody Museum, the school came to an end. In fact, the real inducement that led Morrill Wyman to take part in this school was probably the desire to give to his brother a somewhat larger field for the teaching of anatomy than that offered by his college professorship.

In 1860 Dr. W. J. Walker offered to give to the college, under conditions which do not seem to have been unreasonable, all that remained to him of the earnings of his professional life, for the purpose of improving the condition of medical education. Dr. Wyman was greatly interested in the proposal and did all in his power to promote the undertaking which lay so near to the heart of his loved and honored master. The medical school, however, was not ready to follow a great leader, and ten years more were to pass by before there came to the administration of all the affairs of the university a mind that could fully appreciate Walker's grand conceptions. Walker, however, was dead, and five other educational institutions had profited by the munificent gifts which Harvard had rejected. A succession of reports made by Dr. Wyman to the board of overseers upon the affairs of the medical school, even down to the last years of his life, are evidence of his continued interest in it. It was an unending regret, however, to him that Walker could not have been permitted to see the new day, and to contribute to the support of a teaching of medicine which accorded so well with his own ideas. In one of these reports made in 1898 he records his final opinion of the methods of medical teaching. No one preparing for the medical profession can overestimate the value of laboratory training. Anatomy, the study of the machine; physiology, the machine in action,— are the work of the laboratories. The art of observation, the medical education of the senses, as it has been called, is more valuable as a mental training than all didactic lectures put together. It is the best training for the practice of medicine as an art, as a science and for research. Laennec made and carefully recorded nearly four hundred autopsies before the sounds heard on the chest by his educated ear were properly connected with the morbid changes within. Auscultation could have been invented in no other way.

Upon no work of his life did he bestow more thought than upon the annual address delivered before the Massachusetts Medical Society in 1863. His father had received the same honor in 1830, and had made it the occasion for a statement of the great work of his life. The son took the same serious view of the opportunity offered to him. Three years before, the orator of the society was O. W. Holmes. His exposition of the state of medicine was, it is needless to say, brilliant in the highest degree. He himself said at a later day that he had somewhat too epigrammatically for some of his friends of the Massachusetts Medical Society denounced the practice of drugging for its own

sake, and it is undoubtedly true that a mischievous use was made of the orator's seductive eloquence. It was in any case the effort of one who had viewed the practice of medicine somewhat from the outside. Dr. Wyman undertook the defence of his art as one who knew it thoroughly and believed in it, and there is not one in that long series of anniversary addresses more worthy of notice and faithful study.

With some other members of his family he had been a lifelong sufferer from an autumnal catarrh, corresponding in its symptoms to the affection described by Bostock in 1819 as catarrhus estivus, rose, hay, or June cold. The form of the disease from which Dr. Wyman suffered had not hitherto attracted the attention of medical men and was first accurately described by him in his lectures to the students of the medical school in 1854. In 1866 he brought the subject to the attention of the Massachusetts Medical Society, and gave to the malady the name of autumnal catarrh, adopting the general nomenclature of Dr. Bostock, a title which commended itself much to his favor because it involved no theory as to the cause of the disease. In 1876 he published a volume of 900 pages upon the subject. The quality of the book may be inferred from the quotation from Sydenham which he prefixed to it: "In writing the history of a disease, any philosophical hypothesis whatever that has previously occupied the mind of the author should be in abeyance. This being done, the clear and natural phenomena should be stated; these and these only."

In 1859 there occurred in eastern Massachusetts some cases of pleuro-pneumonia in cattle, which were supposed to have their origin in an infected animal brought from Holland to a farm in this neighborhood. Much alarm arose in consequence among the farmers of the state, and the public authorities dealt with the epidemic in much the same fashion that has lately been the case with the foot and mouth disease. Dr. Wyman was convinced that the extreme measures adopted were not justified by the existing knowledge upon the subject, and urged, as he always did, the need for accurate observation and intelligent experiment. Then, as now, the authorities believed observation and experiment to be sources of danger, and Dr. Wyman was only enabled to carry out a very modest series of experiments upon diseased and healthy animals upon his own estate in Cambridge by authority of a resolve of the Massachusetts Legislature. For this purpose a shed was erected upon his own grounds on Sparks street, and two cows suffering from the disease were procured and placed here with five others apparently sound. They were all kept under careful observation for three months and then killed. The post-mortem examination showed extensive destruction of the lungs of the two cows known to be diseased and a similar morbid process in one of the animals believed to be sound. The remaining animals were in healthy condition. From his experiment, admittedly incomplete, he draws several conclusions, one of them so characteristic that I quote it: "In a commercial point of view, it would have been unwise, so far as the herd was concerned, to kill all the animals as soon as exposed, whether we have regard to the value of the animals recovered or the number which apparently became diseased in consequence of exposure. These are the conclusions to which a believer in the contagious nature of the disease would assent. These experiments have been undertaken not without considerable expense and trouble; they are offered as a contribution to our knowledge of a most important disease among cattle, with the hope that they may be continued until definite results shall be arrived at, not only as to its contagion or non-contagion, but also with regard to other points interesting in an economical point of view, and not less so as it bears upon the study of comparative pathology."

In 1871 sufficient interest had been excited by Miss Emily Parsons' efforts to establish a hospital in Cambridge to induce a number of citizens to procure an act of incorporation for the Cambridge Hospital. In 1874 Dr. Wyman became interested in the plan, was elected president of the board of trustees, and the establishment of a hospital was assured. In 1883 the land was bought, and in 1886 the hospital was opened for the reception of patients. At the age of eighty he resigned the office of president of the board, but continued his interest to the last. Many good citizens have labored for the establishment and maintenance of this charity, but they would all, I think, admit that Dr. Wyman's presence upon the board — and that inevitably meant ceaseless activity — was the most valuable contribution made to the hospital. His work in connection with the plans for the hospital revealed one of the most remarkable characteristics of his later life. He was chairman of a committee of the board appointed for the purpose of preparing plans for the buildings. He had arrived at certain results, and was satisfied with his plan. It was then suggested that a visit be made to the buildings then in course of erection for the Johns Hopkins Hospital, under the direction and in accordance with the plans of that great master J. S. Billings. The visit was made, and after a day spent in the critical examination of the hospital, this clear-seeing brain, though in a body seventy years old, rejected all its own carefully elaborated conclusions and at once set to work to devise improvements in the new scheme which he had substituted. I know of no more striking feature in his wonderful old age than the absence in both brain and body of the defects consequent upon long life. The past was full of pleasant thoughts, and he delighted to recall it at times, but he looked towards the future with all the confidence of youth, and though he had lived through a period which had seen all the great discoveries in medicine, with the exception of vaccination, he was firm in the conviction that greater things even were yet to come.

One substantial addition he did make to the ventilation system of the hospital which can be applied to any plan for the removal of foul air at or near the floor level. It is extremely ingenious and, like most of his contrivances, quite simple. The invention consists in the connection of the inside of the bed with the outlet ducts by means of a flexible tube. The porous bedclothing offers a sufficient obstacle to the free passage of air to prevent any sensation of draft on the part of the patient. A paper entitled "Some Experiments and Observations on the Summer Ventilation and Cooling of Hospitals," presented to and published by the American Academy in 1894, is also founded upon work done in connection with the hospital. This, his last communication to the Academy, was published at the expense of the Rumford fund. Early in his career he was elected member of the Academy, and was for many years the most active member of the Rumford Committee of that body. I will read the concluding sentences of this last paper. "The experience of the Cambridge Hospital leads to two conclusions: first, that fresh air directly from the open, in the quantity and manner thus supplied, can be made to give great comfort to the sick during the heat of summer; and secondly, that previous cooling of the air so supplied is difficult and practically useless. To this may be added, what is of much importance to charity hospitals, that the method here adopted is the least expensive of the cooling processes hitherto made generally known."

He prepared and presented to the Academy in 1887 an elaborate memoir of his friend Daniel Treadwell, of some two hundred pages, which appeared in the series of publications of the Academy. Treadwell probably has had less popular recognition than any other great inventor, yet to this comparatively unknown man the country owes the first prosperity of its railroad system. On printing presses originating from his invention nearly all our books are printed; machines of his device revolutionized the art of rope-making as completely as those of Arkwright revolutionized cotton-spinning; the most effective artillery of modern warfare is made upon principles which he first discovered and applied. In 1825, acting under the authority of the mayor and Board of Aldermen of the city of Boston, Treadwell investigated the subject of a general water supply for the city, and submitted a report, the first public one made on this important subject. Valuable as the report was, the community was not yet prepared to enter upon so considerable an undertaking, and nothing was done until Mayor Eliot in 1837 energetically brought the matter to the attention of the city government. Mr. Treadwell was made chairman of a committee to consider the subject anew, and the movement ended for the time being in the construction of the Cochituate water works in 1848. Treadwell had many of the qualities which were peculiar to Dr. Wyman. The tendency of his mind was essentially experimental. He had the ingenuity of the mechanical inventor and the philosopher's passion for truth. In May, 1865, Treadwell received from the Academy the Rumford medals, one of gold and one of silver. These medals, during the preceding thirty years that the Academy had been charged with their award, had been given to but two persons; never before to a member of the Academy. To him they were given for "Certain Improvements in the Management of Heat." Dr. Wyman was an active member of the Rumford Committee of the Academy, and took great satisfaction in helping to obtain for his friend this well-earned and grateful reward.

He was interested in all the affairs of the community in which he lived, but he never allowed them to interfere with the real business of his life — the care of the sick. In 1866 the whipping of a girl of sixteen in one of our public schools attracted the attention of the citizens and filled Dr. Wyman with a righteous indignation. The school committee declared the punishment to be strictly within the rules established for the government of the schools, and were unwilling to change those rules. By all reasonable means a number of citizens, among whom he was foremost, endeavored to secure from the committee some regulations sufficient to prevent tbe corporal punishment of a young woman of this age. All efforts were in vain and, as a last resort, Dr. Wyman carried in a Republican caucus a resolve that the corporal punishment of girls should be abolished in each and every public school in this city. The next city election changed the character of the school committee, and a more humane rule was established. His efforts in this cause were always remembered by him with great content, and rightly so, for to him, more than any other man, belonged the credit of the reform. He had through it all, and much appreciated, the cordial support of his old, close and tried friend, Dr. Wellington, to whom the public schools of Cambridge owe so much. Two of the public schools of this city now bear the names of Wellington and Wyman.

In 1857 he had acquired the collection of books which Tiedemann of Heidelberg had brought together. Tiedemann was one of the great anatomists and physiologists of the world, and his library was of great scientific value. Dr. Wyman was led to purchase it, not only for the aid that it might be to himself, but also from the feeling, never absent, that his brother Jeffries could profitably use this at that time unrivalled collection of original works upon comparative anatomy and physiology. In 1893 Dr. Wyman gave this library, with some additions from his own medical books, to the Cambridge Library. He hoped that the collection might be soon supplemented by publications containing the recent discoveries, and the most valuable current literature. It now appears probable that the city cannot, with a due regard to the other claims necessarily made upon a public library,

provide for so expensive a development of one department, even so important a one as this. The gift, however, remains an evidence of his loyalty to the place of his residence, and to the highest interests of his brother practitioners of medicine there.

At eighty-five he regarded himself as no longer subject to the calls of those seeking medical assistance. As a matter of fact, he recorded in his case book the attendance upon a limited number of patients as late as June, 1902. Rest in the sense of inactivity was impossible for him, and his activities had always some definite and useful object in view. It might be an observation upon the ventilation of the hospital, or possibly he was busy over some disabled mechanical contrivance which his deft hand could still correct. He was a member of the board of consultation of the Massachusetts General Hospital at the time of his death, and was much pleased by the earnest desire expressed upon one occasion by its trustees, that he should assume the care of the McLean Asylum. If he had consulted his own wishes alone, it is not unlikely that he might have accepted the offer of a position which would have compelled him to sacrifice a very large and remunerative practice. He was always active in the council of the Massachusetts Medical Society, and by an interesting coincidence an important measure proposed by him at a previous meeting of the council was unanimously adopted at the meeting to which the president of the society announced his death.

The Cambridge which he first knew was a village; when he died it was a great city. He had lived through great events in country and state and city; had watched them all with eager eyes, sometimes inclined to blame, but more often to improve. He was a good citizen and interested himself in the first duties of a citizen. On the cold, bleak morning of our last municipal election he quietly walked over to the polling place and cast his vote before most of his neighbors were astir. Among the various interests that centered in Cambridge, no one was greater, next to his patients, than the college and his friends who were in charge of it. Intimately associated with all the great men who during the past sixty years and more have taught here, he had himself served the university in many useful capacities. Professor from 1853 to 1856, he was elected member of the Board of Overseers in 1875 and reëlected in 1881. In 1885 the college bestowed upon him its highest honorary degree, and he was a member of the overseers' visiting committee to the medical school and active there until his death.

He attended through life the services of the Unitarian Congregational Church, but he found it impossible to attach great weight to any ecclesiastical authority in matters of religious belief. His professional life had brought him into contact with men and women of many beliefs, and he had found in all of them so much to respect that he would have hesitated to criticize what after all seemed merely a question of form. He was a profoundly reverent man. Nothing which his fellows deemed sacred was capable of being turned to a jest by him. The motto on the seal of the Cambridge Hospital was chosen by him: "Man tends; God mends," and the belief was as real to him as to the great surgeon from whom he borrowed it. The record of his services to medicine and our medical charities will remain, but for us, his friends, there is something more than this. We shall long remember the well-built, well-kept figure, the serious but kindly and always impressive face, the alert and vigorous movements of the body that never grew to be infirm, and above all, the man, tender-hearted, tireless in service, sagacious, full of courage, impatient of opposition perhaps with regard to questions upon which his mind was made up, and sometimes aggressive, but never forgetful of the rights or interests of his brother physicians. He went out of his way to help the young beginner, and was the first to bring comfort to his older associates when in trouble or in suffering. With no thought of his own renown he believed himself under a sacred obligation to defend the fair fame of those who could no longer speak for themselves. No person in the wide circle of his acquaintance ever doubted that he would speak the truth that was in him, or fail to acknowledge the truth that was in another; and lastly, in his own words, taken from his address before the medical society, I find him well portrayed: "Half way between the extremes in his profession, those who have an unbounded faith in imaginary remedies and those who reject all medicinal agents, stands the rational physician. Removed from the credulity of the first and the scepticism of the second, he feels that his profession is a noble and a glorious one; and inspired with a just confidence, he looks forward to the time when some of its high aims and aspirations shall have been accomplished. He sees in remedial treatment a blessing vouchsafed to the human race. Whether this blessing shall reach those who commit themselves to his care, he believes depends in a good measure upon the ability with which he has searched out the secrets of nature and the faithfulness with which he learns her powers, both those within the body and those which have been accumulated and stored up in the various remedial substances against her hour of need. With the Hippocratic oath he declares, 'With purity and with holiness I will pass my life and practice my art. I will follow that course of treatment which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous.' Cheered by such hopes and sustained by such faith, he seriously and thoughtfully girds up his loins for his work. He meets firmly and uncomplainingly the labors, privations and dangers inseparable from his calling, feeling in his inmost soul that no life can be better spent than that devoted to the relief of his suffering fellow beings."

DAVID W. CHEEVER, M.D., BOSTON.

So complete and so perfect a memorial account has already been given of Dr. Morrill Wyman that I may be permitted to be more discursive in my remarks; and his death at an age so advanced will afford me a theme for a few words on the older members of our profession. While I have been practising medicine in Boston, one hundred and thirty-six physicians, whom I have personally known in this community, have died. Of these, three attained the age of ninety years; while one honored member, Dr. William Ingalls, still survives beyond that term. Dr. James Jackson reached his ninetieth year. The three nonogenarians are Dr. Walter Channing, Dr. Jacob Bigelow, Dr. Morrill Wyman.

We may confidently say that Drs. Jackson, Channing, Bigelow and Wyman, to place them in the order of seniority, were leaders in the medical profession. No men of their time were more prominent. They began life early, and they lasted long. Simple habits, less luxury, out-of-door life, a more quiet age, conduced to longevity. These men accomplished much, but they wrought slowly. What has been better brought out than Jackson's "Hints to a Young Physician"; Channing's "Bed Case"; Bigelow's "Self-limited Diseases"; Wyman's "Hay Fever" and "Ventilation"?

These lives cover the greater part of the nineteenth century. What changes in knowledge and in practice during that time! Bleeding and drugs: expectant nihilism: germs and antitoxines, mark three epochs in that century. These old observers, these clear thinkers, these medical philosophers can well teach us a lesson of patience, tolerance, thoroughness. Jackson, Bigelow and Wyman were pure types on the general practitioner. Dr. Channing was an obstetrician.

Before hospitals existed, their memory was undisturbed by the hasty diagnosis of a hundred cases seen in a single morning. Their observant powers were concentrated on a few cases. Problems were simpler; differentiation less; there were no specialists; blood was drawn, but not examined, save for the "cupped and buffy coat" of inflammation; urine was inspected, but not analyzed; sputum was considered, but not microscoped; and during their earlier years auscultation was unknown. Fever was an entity, and suppuration the rule. There were no alkaloids ready to hand; there were very few proprietary medicines; remedies were slowly and laboriously compounded, and pharmacology was their daily study.

Beginning very young, and studying under one master, they imbibed his traditions and his experience. These older men were strong in well-focussed powers of observation, in the "tactus eruditus," in prognosis, in the art of speech which conceals opinions; cautious, deliberate, guarded, slow to promise, faithful in attendance, as a rule uncommercial, considerate; the family physicians, as advisers, friends, confessors.

The tardy messenger called at their office to summon them forth on foot, on horseback, with a horse and chaise. The telephone, the trolley car, the automobile concerned them not. They slowly spelled out their thoughts on paper without a stenographer, a phonograph or a typewriter. What was done was done slowly, thoroughly and stood permanently. The stethoscope, the thermometer, the microscope were either unknown or in their infancy. The use of the unaided senses sharpened them to an acumen not now common.

Now all is detail, precision, differentiation. The modern is best, but it is sometimes hasty. The older is to be respected for what it did in preparing the way for a newer philosophy. Neither must it be forgotten that these, our medical fathers, and their contemporaries laid the cornerstone of our hospitals; formed and developed our medical schools; originated our medical societies, our rules of ethics and our fee-tables; and passed through and left behind many periods of mysticism and superstition in medical theories.

R. H. FITZ, M.D., BOSTON.

In paying tribute to the memory of Dr. Wyman it has seemed to me fitting to say something relative to his connection with the medical school, in which for a short time he was a valued teacher in the department of theory and practice. It is evident that he regarded this position as one of honor, since in 1872, sixteen years after his resignation, there is imprinted with his name on the title-page of his work on autumnal catarrh, "Late Hersey Professor Adjunct of the Theory and Practice of Medicine in Harvard University." In August, 1853, Dr. John Ware, then at the head of this department, asked for assistance on account of the state of his health. In November of the same year, it is stated in the records of the faculty that Morrill Wyman, recently appointed adjunct professor of the theory and practice of medicine, was present at a meeting of the medical faculty. From that time until the fall of 1856, when he resigned his position, he was a frequent attendant at the meetings of the faculty, served on its committees, and in 1854 was appointed to give the introductory address at the commencement of the annual course of lectures. It would seem, also, that during the following winter he took entire charge of the instruction in this department, for it is recorded that Dr. Ware was then in Europe.

It has not been my fortune to have learned from any of the students of that time what were the characteristics of Dr. Wyman's teaching. It must have been earnest, honest, logical, practical and thorough, for these were his qualities. He was the rational physician who, to paraphrase his own words, had devoted his time and his talents to a laborious preparation for the duties of his calling. He was imbued with a sense of its dignity and of his own responsibility. He knew when to refuse remedies that are useless or dangerous. He was familiar with the ways by which nature brings health from disease, and by weight

of his character he imparted confidence and commanded respect. We know that he attached especial importance to a knowledge of pathological anatomy as the foundation of the study of disease, and took every opportunity of illustrating this part of his teaching by models, drawings and recent morbid specimens. Several years ago he gave to the medical school his diagrams especially prepared, evidently at considerable cost, for the above purpose. A recent examination of this collection shows that it consists of numerous colored, much-enlarged reproductions of plates representing the diseases of the various organs of the body, and selected from the classical works of Cruveilhier, Carswell, Bright and Hope. The interest thus shown in morbid anatomical changes and the importance of a knowledge of them as a means of controlling errors of observation or laxity of judgment, remained throughout his life. Whenever possible he availed himself of the opportunity of applying the test of a postmortem examination to clinical observations, and thus qualified himself for that thoroughness of investigation and correctness of inference which made him a model of caution and wisdom in his numerous medical consultations. His interest in physical and physiological subjects and the practical bent of his mind led him to recognize therapeutic possibilities, and a considerable part of his teaching related to the treatment of disease. The doctrine announced in his annual discourse before the Massachusetts Medical Society in 1863 on the "Reality and Certainty of Medicine" could not have been widely different from his teaching of the previous decade. "If the disease proceeds regularly and safely, the duty of the physician is to hold his hand, be cautious and watchful, see that all dangerous complications are avoided, pains relieved, comforts increased, the strength husbanded, and the disease brought to a happy termination."

Unfortunately for the medical school, Dr. Wyman felt impelled to withdraw after three years of interesting and satisfactory service. This action was contrary to the wishes of his colleagues, who formally expressed their great personal regard and esteem for him and their respect for his abilities as a teacher. Dr. Wyman's professional career then came to an early close, in the fulness of his powers, and at a time when larger opportunities were near, for two years later the Hersey professorship was resigned by Dr. Ware. Nevertheless his interest in the medical school and in medical education was lifelong. Among the last words spoken to me a few hours before his death, with remarkable clearness and emphasis, were those relating to proposals many years ago, which had they been accepted, would have richly endowed the medical department of the university and doubtless have added largely to its usefulness.

WM. T. COUNCILMAN, M.D., BOSTON.

I have known Dr. Wyman since 1892 and in the last few years have seen him frequently and had numerous conversations with him on subjects in which he was especially interested. He was much interested in methods of teaching; and the modern laboratory teaching, in which a student acquires knowledge of objects from having seen, handled, measured and compared them, strongly appealed to him. He several times came into the medical school, went into the laboratory among the students, looked at their drawings and showed great interest in their work. He said to me, "These men are using their senses and that is the only way by which knowledge can be acquired." He was also interested in photo-micrography, and the use which could be made of this in teaching by projecting lantern slides made from the negatives. He regarded it as a further extension of the study of the object." "The student should always see things," he said,—"see what actually takes place in disease and not merely be told about it." On these visits he met the assistants in the laboratory, talked with them about the work they were doing and they received stimulus and encouragement from him. I shall always remember a delightful visit which the entire pathological department made to him one afternoon last November. He had arranged on a table in the drawing-room a number of books containing classical articles in medical literature. Among them was the volume of Guy's Hospital Reports which contained the articles of Bright on typhoid fever and diseases of the kidneys; the monograph of Jenner on vaccination, Laennec's work on phthisis, John Hunter on inflammation. He talked to us of the books and their authors, of his early studies, of the influence which his old preceptor had upon him. We told him what we were doing, and with each he entered fully into the interest of the particular subject. In this intercourse he sought to give the impression that the advantages were his, not ours.

A few years ago a small monograph on diphtheria was published from the laboratory and a copy was sent to Dr. Wyman. A number of letters were received about the work, but from no one came such kindly and intelligent appreciation as from Dr. Wyman. He came to the laboratory shortly after this and left with me the memorandum which he made while reading the work, and which served as the basis for his letter. In the memorandum he had noted what was new in the work and what was of importance. He noted the mixed infections between diphtheria and purulent infections, and wrote: "On such cases antitoxin can have no effect." He also noted the frequency with which tuberculosis, unsuspected clinically, was found in the autopsies on children. Many of the tuberculous lesions could be regarded as healed, and he wrote, "This is interesting and most encouraging in view of the present efforts for improved treatment." On the changes in the Malpighian bodies in the kidneys, he wrote, "I love to see the name of Harvey's great demonstrator. He had no one to teach him where to look for the confirmation of theory. It required seven years' search of his own."

Of late I think his chief interest lay in the study of the structure and function of the placenta. It seemed to me that this interest was partly a reminiscence of his early days as a student under Dr. Walker. Last summer he wrote me, saying he had traced the development of our knowledge of the placenta by the work of the two Hunters, Owen, Dalton, Michael Foster and Vuchow, and desired me to add what I now taught about it. As the placenta hardly comes within my province, I had had no occasion to look up the recent literature and had no special knowledge on the subject. I finally wrote out as clear an account as I could and took it out to him with some diagrams and preparations. We spent two hours on the subject, for in explaining the functions of the organ it was necessary to go at some length into the subject of serum and immunity. No young man could have been more eager, and have shown more readiness in grasping new information. In his medical reading, Dr. Wyman always selected the best things by the best men, and few had such a knowledge of the medical classics. He knew and appreciated the great men of the past and he is now one of them. He sought knowledge by careful observation and sound reasoning. He had what is so often found in great men, a simple, kindly nature. He gave help and sympathy to those who were trying to increase knowledge. Men were better students and better men from having known him.

J. T. G. NICHOLS, M.D., CAMBRIDGE, MASS.

It has been well said that the qualities which mark the good physician are learning, sagacity, humanity and probity. All who knew him will say that Dr. Wyman bore these marks.

For nearly fifty years I was in close association with him as a student and a fellow-practitioner, and would say a few words of him as a teacher. It was for a few years only that he found time to give instruction to medical students. Those who were so fortunate as to have this privilege placed him in the front rank of teachers of medicine.

His great field as a teacher, and one that he cultivated faithfully and never abandoned as long as he lived, was among his fellow-physicians. He had an extensive consultation practice which brought him in contact with a great many. This gave him an opportunity which he used faithfully and wisely. Always mindful of the rights of others, he had the confidence of his professional brethren. When he had to point out errors or shortcomings of the attending physician he did so frankly, but in a way not to arouse his antagonism but to inspire him with the desire to do better work.

He took great interest in our medical societies. He was a regular attendant at their meetings, and the records show that he was a frequent contributor to their proceedings. In these ways he did more than any one in our community, as I believe, to raise the standard of our profession.

This line of Lowell's, written of his brother Jeffries Wyman, applies to him, "Wisely to teach, because more wise to learn." Dr. Wyman even to his last days kept abreast with the advances in medical knowledge. With him education was a life-long business. He was conservative in the best sense of the word, proving all things and holding to that which is good. His judgment as to the probable truth of new theories was singularly good. I give one illustration of this judgment. In 1843 Oliver Wendell Holmes maintained in an essay entitled "Puerperal Fever a Private Pestilence," that this disease was often carried by the physician from one patient to another and that any foul discharge might be carried in like manner and cause this disease. This doctrine, now universally accepted, was strenuously and bitterly opposed. The professor of midwifery in the then leading medical school of the country told his students that they could "never convey in any possible manner a horrible virus, so destructive in its effects and so mysterious in its operation, as that attributed to puerperal fever." Dr. Wyman investigated the subject, and becoming convinced of its truth, taught it by precept and example. He had the power which Hippocrates commends in saying, "I look upon it as a great part of the art to be able to judge properly of that which has been written."

All honor to the memory of the man who so fully paid the debt which Lord Bacon says every man owes to his profession, by leaving it better than he found it.

Original Articles.

THE SURGICAL TREATMENT OF GASTRIC ULCER.[1]

BY JOHN C. MUNRO, M.D., OF BOSTON.

IN accepting the flattering honor of discussing the treatment of gastric ulcer before your section, I must plead, as a partisan, for the more intimate association of the internist and the surgeon in the study of this large class of cases. What I shall say will be for the general practitioner. Without hesitation, I venture to predict that within five years my plea will be considered mild and conservative by those of you who would put me down as too radical at the present time.

In the first place, there are certain fundamental facts recognized by the surgeon, but not yet fully appreciated by the physician. An operation as performed on the average patient with a mortality so small that it may practically be disregarded becomes serious or even unjustifiable if done in the presence of persistent hemorrhage, prolonged sepsis, starvation, absorption of ptomaines, etc. These facts are so persistently overlooked by the general practitioner that it seems worth the while to bring it up in connection with the subject of gastric ulcer. Let me, in this connection, repeat a

[1] Read before The Massachusetts Medical Society, June 9, 1903.

statement that I made not long ago before one of our section meetings: that a careful analysis of over a hundred consecutive laparotomies that came to my care at the City Hospital demonstrated that at least 60% came too late from a surgical point of view. Is it fair to lay at the door of surgery all the failures, the tedious recoveries, the inevitable sequelæ, or the deaths that must obtain in such a group of cases?

In the treatment of gastric ulcer, where surgery is indicated, if we grant that in our earlier work, hesitating technique, errors in the selection of cases and in the after treatment, give discouraging or fatal results, we must not lose sight of the fact that eventually we are to look to surgery for the relief or cure of ulcers incurable by medical means, for the prevention or cure of the malignant degenerations and for relief from the thousand and one distressing sequelæ that do not kill, but that make life worse than death.

Up to the present time surgery has by no means solved the whole question of the treatment of ulcer or its complications. There is much still to be learned before we can fairly say that a beginning has been made, but the process of learning must go on with the internist and the surgeon working conjointly in practically all cases of ulcer or suspected ulcer. Later, when both surgeon and physician are educated sufficiently, as is the case in appendicitis for the most part, to enable each to recognize what types are medical and what are surgical, the combined observation will be demanded in a small proportion only of all cases. This is the ideal for which we must strive.

Without hesitation I would agree that the majority of cases are medical theoretically from first to last. To determine where the line should be drawn in the remainder demands a most careful and persistent collaborated study in all cases of ulcer, at least for a while.

It is not my purpose to quote statistics. One can safely state that the results, as regards mortality, from operation are improving almost month by month. If we take the published reports of the operators of largest experience, like Mikulicz, Robson, Mayo, Moynihan and others, we find that both their immediate and remote results are far better than the results as given by internists. And yet, these surgeons of large and selected experience recognize the limitation, appreciate the failures and are as conservative in their judgment as one could wish. Through it all, and in spite of failures, the one great fact remains that ulcer of the stomach is more and more becoming a disease to be treated by the surgeon, not late but early; not as a last resort, but before the starvation, the long suffering from pain, dyspepsia and fermentation-absorption have reduced the patient until he is beyond surgical help; before he is anemic from persistent bleeding or peritonitic from culpable delay.

A discussion of the technique that so interests the surgical world has no place here. Each advance means more lives saved. Much of the complicated technique could be eliminated were it possible to give the surgeon his cases when he wishes and not when the physician is compelled. No one but a surgeon especially interested can keep pace with the phenomenal advance in this line, always for the better, within the last three years.

Compare the oft-quoted statement of Greenough and Joslin, that every other patient with gastric ulcer that one sees in the hospital is either to have a recurrence or never to be well again, with the results of the hundreds of cases reported by the various surgeons mentioned above. One must thereby be convinced of the value of surgery in this class of cases.

Another plea that I would make is for the internist in the present transitory stage of stomach surgery to found his pathological knowledge on living as well as upon postmortem dissection; in other words, let him see in the living that which the surgeon sees, and correct his views by these findings, not relying entirely on the limited knowledge obtained at the autopsy. Let me illustrate by a parallel example. A number of years ago, when there had been but one or two interval appendectomies in this neighborhood, I ventured to remove an appendix from a patient who had suffered for a long time from colics and indigestion. The appendix appeared normal, and one of our most eminent pathologists, who had obtained his knowledge entirely from postmortem findings, scored me severely for performing a meddlesome, unjustifiable operation. I will venture to say that within the last year there have been thousands of operations under similiar conditions, failure to perform which would now be considered unjustifiable.

Are the present methods of diagnosis by chemical analysis of any value? I am sure that at least three fourths of such diagnoses are of no practical value, when it comes to cases that would be classed as surgical by a surgeon. In my own limited experience the analyses have been interesting but much less reliable than general clinical data. The important thing for the patient and the surgeon is not to know that there is an ulcer, but to know that that ulcer is doing harm where it is situated; whether single or multiple (though that is of less importance); whether the ulcer symptoms may or may not be due to adhesions; what contractions there are consequent upon its healing; whether the base of the ulcer is already undergoing malignant degeneration; whether the ulcer is on one side or the other of the pylorus; whether the next hemorrhage may not be fatal, as I have seen so many times, comparatively, in ulcers medically treated. In other words, the internist may or may not be able to state that there is an ulcer; beyond that he cannot go. To determine whether there is a condition amenable to medical treatment he must experiment to a certain extent. If he succeeds, well and good; if he fails he must be willing to seek the co-oper-

ation of the surgeon, or better, he should have sought it early in order that both should study the case, and both should learn, each from the other's findings.

I will quote an oft-repeated statement by Mikulicz, who has had unusual and very great experience. He says: "The danger to life from gastric ulcer is at least not less but probably far greater than the danger of a complete modern operation." It is fair to say that gastric surgery has so rapidly progressed since that was written that the application is still more pertinent.

What cases are medical and what are surgical? No hard and fast line will be drawn for years to come. Many patients with first attacks, without serious hemorrhage, who can give up the time, and who realize the importance of prolonged rest, as so well emphasized by Shattuck, will recover permanently under medical treatment, but the following types are best considered as surgical: Probable cases of relapsing acute hemorrhage. Cases with hemorrhage if persistent and causing anemia. Perforation. Recurrent ulcer, pure and simple, attended with dyspepsia and starvation. Pyloric obstruction. Adhesions following ulcer or independent of it. Scar contraction of the body of the stomach. Some cases of intractable dyspepsia, perhaps originating in an ulcer, and for which no definite pathology is known.

Let us consider each of these types a little in detail. In relapsing hemorrhage various surgeons are already obtaining satisfactory results from a simple gastro-enterostomy.

In chronic hemorrhage, although all surgeons realize the imperfection in their results,— that is, occasional relapses, operative deaths, jejunal ulcers, etc.,— yet the benefits are so much better than from medical treatment, and the improvement in results is so steadily and surely advancing, that I have no hesitation in placing this type in the surgical list.

In perforation no one will deny the wisdom of early operation, and yet in this city there are physicians still who allow the first twelve hours to slip by before they summon surgical advice, unable or unwilling to make a diagnosis, and thus reduce the patient's chances of recovery from seventy in a hundred to practically nothing. Is there any valid excuse for this?

In cases of simple ulcer with dyspepsia and starvation, surgery has a wide field before it; far wider, I venture to predict, than medicine. Let me read that most graphic description of Moynihan's, published in the last issue of the BOSTON MEDICAL AND SURGICAL JOURNAL [June 4, 1903]: "There are few beings so abjectly miserable as those who are the victims of intractable dyspepsia. The meal time, which should be a delight, is a time of despair and foreboding. The keen relish of good food, which the man in physical health should appreciate, is a joy unknown or long forgotten to the dyspeptic. A patient who has misery written in every wrinkle of a thin and haggard face, who by reason of long suffering and bitter experience has felt compelled to abandon first one dish and then another, till fluids alone can be taken, and these not always with impunity, a patient, to say the truth, whose whole life becomes embittered by the pangs of a suffering which he must inflict upon himself, this patient will find if a gastro-enterostomy be done for the chronic ulcer, which is the source of all his trouble, that his return to health and appetite is at first almost beyond belief."

In cases of pyloric obstruction we have a purely mechanical problem with which to deal. No amount of medicine can overcome this condition, and no amount of argument by the internist can convince the surgeon that such cases are best treated medically.

Cases of adhesions from chronic ulcer, gall-bladder disease, appendicitis, etc., cannot be accurately diagnosticated without the aid of surgery, and very few of them can be relieved without operation.

Cases of beginning malignant degeneration cannot and probably never will be diagnosticated *in time* by the internist. What surgeon ventures to definitely say that a chronic mastitis is or is not starting a malignant focus? Even the pathologist may have to examine hundreds of sections. How much less likely are we able without operation to make a similar diagnosis in a chronic ulcer, situated we know not where in the stomach, of whose size and condition we are absolutely ignorant, and of whose actual presence we may be unaware!

In gastric neuroses of uncertain origin, but with a history of ulcer, many mistakes will be made by the surgeon. This class needs much study by specialists in all branches, but undoubtedly in a small proportion, on the theory of chances, surgery will be of some benefit.

In conclusion I would urge a more intimate co-operation of the physician and surgeon in the observation of patients with ulcer of the stomach. The surgeon must willingly grant that a majority of simple ulcers are best treated and cured by the internist, but on the other hand, the latter must as willingly consider surgical advice in the obstinate or serious types of cases, and learn in the living a pathology that it is impossible to learn in any other way.

DISCUSSION.

DR. E. P. JOSLIN of Boston: Six cases of ulcer of the stomach treated surgically have come under my observation. The reports of the cases are as follows:

CASE I. Miss E. F., forty-four, was seen March 7, 1902. Entered Boston City Hospital, Sept. 11, 1901. For the three years previous, dyspepsia. In March, 1900, vomited 6 oz. blood. Winter, 1900–1901, pain in epigastrium, which increased during the summer. Ewald test breakfast, September, 1901, showed 50 cc. or 0.18% hydrochloric acid. Hemin crystals.

Sept. 19, 1901. Gastro-enterostomy.

A pale, indurated, round area the size of a silver dollar was observed, which was situated midway on the lesser curvature upon the anterior wall.

Oct. 1. Phlebitis in left leg. Discharged Oct. 28.

March 7, 1902. Cramplike pain in region of stomach. Pale and rather thin. Fasting stomach showed lower bor-

der at navel and no tumor. It contained 12 cc. slightly greenish fluid. No free hydrochloric acid. Total acidity, 5. Mucus. Many leucocytes and a few red blood corpuscles. Died of cancer of the stomach, May, 1903.

CASE II. Miss K. M., fifty-one, was seen for the first time Oct. 21, 1902. Digestion never strong. In July, 1901, vomited, almost for the first time in her life, at midnight and again on the street five days later. Three days after this was strong enough to ride a bicycle from Buffalo to Niagara. Since this time has had vomiting spells every month until four weeks ago a vomiting spell lasting for two days. This was repeated four days and three days ago. In the last attack the quantity was two quarts and some of it was dark brown. Weight in 1893, 160, one year ago 143, now 123. Examination showed a fairly nourished woman with good color. Pulse 76.

Stomach — upper border 2 cm. below ensiform, lower at navel. No tenderness. Fasting stomach contained 240 cc. coffee ground material. Free hydrochloric acid present.

Oct. 22 to Nov. 18. Steady improvement, but on this day vomited. Free hydrochloric acid 0.1%. Total acidity 0.15%. The stomach was washed out Nov. 19, 20, 22, at which time the patient was taking but little under the normal quantity of food, but the second improvement did not continue. Several mild attacks of tetany occurred. On Nov. 29, Dr. Pfaff concurred in the diagnosis of ulcer and in advising operation. A gastro-enterostomy was done with an enterostomy by a Murphy button. At the operation the surgeon erroneously supposed that there was a cancer at the pylorus. Circular vomiting ensued and lasted till the death of the patient sixteen days later, Dec. 16, 1902. Tetany did not reappear after the operation.

Autopsy. — Dr. Hoag of the Boston City Hospital.

Gastro-intestinal tract. Mucosa of the posterior wall of the stomach is finely mottled by many conspicuous red points usually less than 1 mm. in diameter. Pylorus normal. One cm. below pylorus, upon the posterior surface of the duodeum, there lies an oval ulcer 1 cm. x 6 mm., entirely perforating the coats of the duodenum; margin, narrow, firm, inelastic, level and gray. The duodenum at this point is nearly occluded, admitting but the tip of the little finger. The margins of the ulceration are lightly attached to the anterior surface of the head of the pancreas so that no leakage occurs posteriorly.

The orifice of the gastro-jejunal anastomosis admits the tips of two fingers, and is bounded by a slightly elevated margin, unaccompanied by injection or other inflammatory sign. There is free communication between the two arms of the jejunal loop at the gastric opening. The second anastomosis, jejuno-jejunal, is perfectly patent and patulous, easily admitting the finger. Thus the anastomoses are perfect; no lack of infection is evident.

CASE III. Mr. M., sixty-two. First visit April 30, 1902. For thirty years pain in the epigastrium with heartburn. For one year has vomited frequently, and daily since April 26, two quarts at a time. Three weeks ago hemorrhage from the bowels sufficient to cause fainting. Alcoholic history. Vomitus — free hydrochloric acid 0.16%. Total acidity 0.32%. Sarcinæ. Examination showed fair color. Weight one year ago, 160; April 30, about 135. Lower border of stomach at navel.

May 12. No improvement under diet and lavage. Diagnosis — gastric ulcer and dilatation of the stomach. "Surgeon said in the consultation that he had never had a more favorable case for operation."

May 14. Operation.

May 15. Death with distended abdomen. Autopsy absolutely refused.

CASE IV. Miss S. D., twenty-seven, gave the following history on Oct. 24, 1902: Always had had stomach trouble. Vomiting from seven years to four years ago. March 18, 1898, vomited a hand basin full of blood, and this was repeated on the following day, notwithstanding that she had lived on milk for the preceding three months. July 6, 1898, perforation of the ulcer and emergency operation in the country, which was completed in August of the same year at the Boston City Hospital.

January, 1901, vomited one-half a cup full of blood, and on April 5, 1902, one half as much more, at both of which times she returned to the hospital for an ulcer cure. Appetite good. Weight, 1896, 98; April 27, 1903, 121. Occasional attacks of vomiting and pain after eating, similar to the pain before the perforation five years ago. Diet is extremely simple. At present is a telephone operator.

CASE V. Mr. H. D. S., thirty-one, consulted me March 4, 1901. Stomach always has been his weak point. In the early part of December, 1900, began to have faintness between meals with pain and hunger, and since that time has vomited on six occasions. Best weight, 157; weight to-day 151. Hemoglobin 80%. Pulse good. Splashing in abdomen easily obtained, but the stomach distended with air was ½ cm. above the navel though 3 cm. below the ensiform. Ewald test breakfast, 90 cc. free hydrochloric acid present, 10 cc. blood.

March 7. Entered the Deaconess Hospital and underwent a typical ulcer cure. During the first week several severe hemorrhages, but by April 20 had improved so much as to be allowed to convalesce out of town. Weight 118¼.

May 2. Hemoglobin 80%. Weight 134¼. Patient evidently was eating too much, though of simple food, and the diet was curtailed.

May 9. Weight 138.

May 11. Vomited blood and was sent to the Boston City Hospital, where he underwent a second ulcer cure, but at the end of a few weeks again vomited blood. Operation on June 15. Excision of an ulcer which partially narrowed the pylorus. Convalescence was slow but steady, and patient resumed work in nine months. June 24, 1903, reports himself very well.

CASE VI. Mr. A. H. H., fifty-nine, was seen May 30, 1903. His father was a chronic dyspeptic, vomited for fifty years and died at eighty. The patient has had for three years distress and gnawing pain in the stomach, which has been relieved by food and soda. In October, 1902, gave up work. Since October he has frequently vomited, and on a few occasions food which was eaten two days previously has been recognized in the vomitus. As a rule the vomiting has been voluntary. The patient has drunk large quantities of water and washed out the stomach in this manner. Involuntary vomiting has occurred only within a few days. On the morning of May 30 the patient vomited nearly two quarts of coffee-ground material, which contained free hydrochloric acid. Total acidity 74. No lactic acid. Sarcinæ present. Weight two and one-half years ago, 228; weight one year ago, 206; weight four months ago, 155; at present time about 135 pounds. Color, fair. Pulse 78 and of fair quality. No tumor felt in the stomach. Two days after the first hemorrhage another occurred. On the following day Dr. Pfaff, for whom I had made the single visit, saw the patient and advised operation, which was performed the next morning, June 3. An ulcer was found near the pylorus, which was nearly occluded by the inflamed mucous membrane. Gastro-enterostomy. To-day, June 9, uninterrupted recovery.[1]

SUMMARY AND RESULTS.

Case I. Hemorrhage. Gastro-enterostomy. Recovery from operation. Death twenty months later from cancer, which probably existed at the time of operation.

Case II. Hemorrhage and dilatation. Gastro-enterostomy. Entero-enterostomy. Death with circular vomiting sixteen days after operation.

Case III. Hemorrhage and dilatation. Gastro-enterostomy. Entero-enterostomy. Death within thirty-six hours.

Case IV. Operation for perforation. Recovery. Two subsequent attacks of hematemesis in following five years. Patient able to do light work, but has indigestion.

Case V. Hemorrhage and dilatation. Excision of ulcer. Recovery, and is well two years after operation

Case VI. Hemorrhage and dilatation. Gastro-enterostomy. Recovery. (Operation June 3, 1903.) Died July, 1903. Colloid cancer.

Excluding the first case, the mortality in these five operations is 40%. Of three patients who recovered from the operation, one has had two

[1] Patient died July, 1903. Colloid cancer of pylorus.

relapses in five years, one has remained well two years and one is doing well fourteen days after operation.

If ulcer of the stomach is to be operated upon successfully in Boston, a change must take place in present methods. There is an abundance of good surgeons, but few have had extensive experience in stomach surgery. In a ball game the members of a team always play their respective positions, but the surgical nines in our large hospitals play in any position that offers and the substitutes do the same. It is to be expected that each surgeon will have a number of failures while acquiring experience. When it is remembered that there are thirty or more surgeons, any one of whom may be called upon to operate upon ulcer of the stomach, the number of individuals destined to be offered up on the altar of experience becomes rather appalling. Until some agreement is reached whereby stomach surgery is limited to a few men, better statistics are not to be anticipated.

Dr. F. M. Sherman of Newton: I find myself, for the most part, in accord with the reader of the last paper. His advice that the physician and surgeon co-operate in the treatment and in the study of these cases seems to me timely, because I believe that the knowledge to be gained in the future through surgical experience will decide many of the questions now open concerning gastric ulcer.

The definite and positive opinions I have formed on the treatment of this affection are: *First.* That the majority of cases properly belong to the domain of medicine rather than of surgery. *Second.* That the best medical treatment is that long ago recommended by Wilson Fox and by Foster, which is rest in bed, no food by the mouth and rectal alimentation. If water is freely supplied most patients can stand a lot of starvation. In addition, water made alkaline with bicarbonate of soda may be administered, with the idea of diminishing the acidity of the gastric juice and irrigating the ulcer with a bland and slightly antiseptic fluid. Favorable results sometimes follow this treatment, even when imperfectly carried out; but the gravity of the affection is enough to warrant its rigid enforcement, and under it I think we may expect many patients to recover, and to recover more quickly and more easily than under any other treatment. *Third.* Nevertheless, in spite of any medical treatment, there will be a certain proportion of cases not benefited. These cases should be offered surgical treatment, not only because of the suffering, the disability and the ever-present dangers of hemorrhage and of perforation, but also because of the possible grave sequelæ, those, for example, resulting from perigastric adhesions, caused by a local peritonitis over the ulcer, or that very serious condition, cancerous change at the seat of the ulcer, which many believe to be common. *Fourth.* Cases of dangerous hemorrhage from gastric ulcer should have surgical treatment. *Fifth.* In case of perforation, surgical intervention is imperative, and the sooner the better. Early operation here offers a good chance for success.

Dr. J. H. Jackson of Fall River: I can add but little to the evidence as to the seriousness of the disease discussed, or to the methods of forwarding recovery. The papers have been wholly admirable and it is difficult to add to them. There may be some little things which may be of interest.

One thing I think has not been emphasized sufficiently, although it has been touched upon by four or five of the speakers and writers: The absolute necessity, in ulcer of the stomach, of rendering not only the stomach and bowels less acid but the condition of the blood less acid. Though we must consider the method of attack of acids upon the stomach, whether pepsin or hydrochloric acid or anything which attacks the stomach and causes the ulcer, these are secondary causes; behind them as a primary cause is lack of alkalinity of the blood, which promotes the condition favoring ulcer. Were the blood more alkaline, the acids would destroy the tissues less. Were it more in the condition of normal alkaline blood, it would not permit the peculiar provocative elements which attack the whole of the stomach; ruptured capillaries, embolism, infarctions and blood clot would be impossible. Hence the necessity of some addition to the blood to prevent the conditions which may induce the ulcer. If these conditions exist before the ulcer forms, they certainly exist in an accentuated degree after the formation of the ulcer. If acidity exists, why must we not overcome the tendency by methods that have been so well suggested in the discussions that have taken place? I feel sure that these things lie behind the condition which produces the ulcer. The ulcer is the cause of other troubles, coming out of its deep delving among the coats of the stomach, even puncturing them and causing adhesions.

Very little has been said about adhesions. Here comes in, if you have ascertained adhesions (as you may by various methods of physical examination) and a distended stomach, this question: What can we expect from medicine to establish a permanent cure? We may do much temporarily, and our patient recovers temporarily, with the remaining condition of a stomach which induces a recurrence of the trouble. Here comes in the need of the surgeon. These operations promise a great deal more in the future than is suggested by the past statistics. By all means, welcome the surgeon early in these cases.

As to the treatment, I have only a few words to say. All the things spoken of in the preceding papers and discussions need to be thought of in connection with it. The medical man is simply the one who meets the emergency for the time being, and if he is a wise man he will call in a surgeon, and he and the surgeon will lay their heads together, that they may accomplish the return of the patient to health.

In a distended stomach, with adhesions and an ulcer in it, with a band running around its

middle, making of the stomach an hour-glass or conical, with an ulcer an inch long,— if the pressure of food is aggravating this, what can pills and powders do that will permanently stop the hemorrhage? Welcome all efforts for cure of the disease by medicine, but by all means hand over the case in adhesions, stretching and dragging on the pylorus, or distention of the stomach, to the surgeon. Let us add to our medical treatment that of the surgeon

THE MEDICAL TREATMENT OF GASTRIC ULCER.[1]

BY HUBERT G. WILBUR, M.D., FALL RIVER.

PROPHYLAXIS.— From statistics obtained by Professor Welch, open ulcer of the stomach or cicatrix was found in 5% of persons dying from all causes. The average frequency of open ulcer was about 2% in persons dying from all causes. Judging from these and other postmortem records, gastric ulcer is of more frequent occurrence than is commonly supposed.

Now that so much of medical effort and energy is directed towards the prevention of disease, gastric ulcer should at least be guarded against in cases of anemia.

It has been proven by experiments on animals that when they were rendered anemic gastric ulcer developed from much slighter irritation and healed more slowly than when the blood was in its normal condition.

Traumatism and localized pressure may also cause ulcer. In chlorotic females it would be wise to regulate the diet to avoid very hot things, coarse foods, highly acid and highly seasoned foods; also avoid corsets and tight clothing.

Occupation has its effect in the causation of ulcer. Seamstresses, typewriters, tailors and clerks, who lean against the machine or desk, producing pressure against the stomach, are all liable to ulcer.

Welch reports a case of ulcer in a carpenter who leaned heavily against his chisel while at work; and another case in a shoemaker who cut leather while holding it firmly against his stomach.

Hyperacidity and hypersecretion of the gastric juices, especially if they be associated with altered blood condition, demand appropriate treatment, lest they too prove to be the forerunners of gastric ulcer.

TREATMENT.— The diagnosis of ulcer once established by local tenderness, pain, vomiting after taking food and hematemesis, the treatment indicated is: First, to secure rest in bed that the strength may be saved; second, to obtain absolute rest for the stomach until pain, vomiting and hemorrhage are relieved, relying on nourishment by bowel to maintain the vital force.

PAIN AND VOMITING.— Indigestion of food is usually attended with pain and vomiting. Food acts as an irritant to the sensory nerve at the abraded or ulcerated surface. Vomiting is also produced by the presence of food which the stomach is unable to take care of, and which it tries to eject. Food causes excessive secretion of the gastric juice, which in itself aggravates the ulcer; at the same time peristaltic action of the muscular coat is stimulated, thus increasing the liability to hemorrhage by the erosion of some of the small blood vessels. Hence pain, vomiting and hemorrhage demand absolute rest for the stomach for at least three or four days.

A case of chronic ulcer, under my observation for a period of eight years more or less, was of such peculiar interest that I may be pardoned if I briefly mention it here. The patient suffered from indigestion about all the time, but kept at his business. When I saw him at first I used lavage, with relief from pain and distress, and some improvement followed. After several months, however, the old symptoms returned, and he siphoned his stomach himself to get relief from pain and hyperacid condition. During the past three years the patient has had several attacks of vertigo, attended with a feeling of extreme weakness. Once I found him very pale, with small thready pulse, complaining of sickness of stomach, feeling very weak, and covered with a cold perspiration; this was followed by diarrhea, with dark, tarry stools.

During one of the acute attacks, in October, 1901, I sent him to Dr. H. F. Hewes of Boston. Dr. Hewes gave him an Ewald test breakfast, after washing his stomach out. After examination of the contents, Dr. Hewes reported: Acid in reaction; free hydrochloric acid present; also pepsin and renin. His diagnosis was gastroptosis, dilatation, decreased motor power, with a tendency to stasis. He suspected ulcer and possibly cance.

The patient continued in a fair condition of health, keeping nearly his usual weight, although the condition of his stomach allowed him to take very little nourishment. His appetite was very good; anything but the simplest food, however, was followed by great distress, pain and the formation of gases. His wife frequently siphoned out his stomach at night, because of severe pain, so that he might sleep.

In March of the present year, becoming perhaps a little more involved in business, and getting more than usually tired, his stomach refused to digest anything. The stomach was siphoned out repeatedly. At one time the result was a considerable amount of dark, granular fluid, coffee-ground in appearance; this was followed by dark, tarry stools.

I was called to see him at this time, and gave ergotole m. xxx to relieve the hemorrhage, with saline enemata and stimulants subcutaneously to sustain the pulse. On the following morning I gave a mild saline laxative to relieve acidity and cleanse the stomach of whatever of food or debris from the ulcer was there. Bismuth subnitrate in half-ounce doses stirred in a glass of warm water was given once daily, with some relief of pain and fermentation. No food was allowed by mouth for three or four days. Cracked ice was given to relieve thirst. Patient was fed by bowel. The nutrient enemata were at first egg and peptonized milk beaten well together, to which was added ʒ ii of claret. This was

[1] Read before The Massachusetts Medical Society, June 9, 1903.

given about three times in the twenty-four hours. This nourishment was not retained well, and caused a good deal of distress and gas, and the subsequent cleansing enema showed that it was not well absorbed. Predigested beef and Bovinine were tried, but they did not seem to be well taken up by the bowel. The patient became weaker day by day, he developed fever and mild delirium; nothing was retained, whether taken by mouth or by bowel, and he died after ten days' sickness.

A postmortem was obtained. A large ulcer, with shelving edges, about one and a quarter inches in diameter, was found near the pylorus. About one inch in towards the pylorus a scar was found, about one inch in length. Dr. Mallory examined the stomach, and pronounced it a case of simple ulcer.

If thirst be a troublesome symptom in these cases, small pieces of cracked ice may be tried or an enema of water be given. Violent pain and continued vomiting call for external applications of laudanum fomentations. A mixture of chloroform ʒ i, alcohol ʒ iii, applied on flannel will relieve pain. In obstinate vomiting I have used gr. 80 of sodium bromide with ext. cannabis indica gr. ½ by enema, with excellent results. This failing, opium by suppository or morphin subcutaneously will give relief, but they should not be tried until other remedies have failed.

FEEDING BY THE BOWEL.— In most cases rectal feeding is disagreeable to the patient and liable to be irritating at first to the bowel; hence it is best to begin with comparatively small doses, and at intervals of about eight hours. The tendency has been, I think, to give the nourishment by bowel too frequently. The usual enema is absorbed slowly; hence a sufficiently long interval between the feedings is desirable, until we establish tolerance on the part of the colon. Once the bowel is educated up to taking food at regular intervals, then we can feed the patient for at least ten days or two weeks, until the more aggravated stomach symptoms have subsided, when we can gradually resume regular feeding by mouth. In all cases the rectum must be cleansed with one pint or more of warm salt water about an hour before each enema. We can then determine to what extent the food has been absorbed. If we find that it has not been well taken up by the bowel, it will be advisable to change to a more simple form of nourishment.

The anemic condition must be remedied by iron in some form. The ideal nutrient, then, to sustain strength and renew the impoverished blood would seem to be blood itself. We know from experiment that defibrinated blood is wholly absorbed by the bowel when given in small amounts, ʒ 5 or 6 at a time. There may be some difficulty in obtaining blood, since it is not so readily accessible as the other foods.

Stewart's formula is one that should meet the condition; namely, a heaping teaspoonful of somatose is dissolved in as little water as possible; two eggs are thoroughly whipped with it; and ʒ 4 of peptonized milk gruel added to it; the whole not to exceed ʒ 8. Papain is given for the digestion of the egg. If the enema is well borne, he adds some form of the albuminate of iron (preferably Dree's), ʒ ½ to 1.

To combat anemia and improve the general condition, Ewald used ʒ j of a 3% solution of ferri chlorid in a wineglassful of egg water (one part white of egg, two parts of water), taken through a glass tube to protect the teeth. He maintains that chloride of iron is one of the best and most easily assimilable preparations that there are. With the iron he gives arsenious acid gr. 1-30 in pill form; this treatment he continues for months.

Since rectal feeding is not sufficient to sustain strength very long, we should try feeding by mouth as soon as we think it safe to do so. After two or three days' rest the stomach will admit of gradual resumption of food. Begin with very small doses of milk and lime water, a teaspoonful at a time; liquids in a predigested form; peptonized milk gruel; matzoon; and milk thickened with partially digested starchy foods, such as Nestle's, Mellin's, Malted Milk or Imperial Granum, to prevent the congulation of the milk. If foods prepared with milk disagree, give beef juice in teaspoonful doses, either peptonized or pancreatized, or egg albumin beaten and prepared with sherry wine.

If a bland diet is tolerated, we gradually add to it broths, eggs, light puddings, sweetbreads, minced chicken and finely scraped beef, being careful to eliminate all foods likely to irritate the stomach, such as brown bread, oatmeal, coarse vegetables and fruit. As the gastric symptoms disappear we may give toast, rusks, rare roast beef and beefsteak. Any serious departure from a strict diet carefully laid down may bring about a return of the old symptoms.

Hemorrhage occurs in about 50% of all cases. In repeated and profuse hemorrhage Dreschfeld advises turpentine and considers it to give great relief. He administers it in capsules, or in emulsion ʒ ii thoroughly beaten up with the white of one egg. The dose is m.xx or xxx of the mixture.

He cites several cases of hematemesis in which the patient was pulseless and blanched to an extreme degree, in which ice, gallic acid, ergotin injections and other styptics were tried in vain, and in which the first dose of turpentine completely stopped the hemorrhage. It is well borne by the stomach.

In case of hemorrhage with symptoms of collapse, flood the colon with hot salt solution, ʒ 1 to the pint, and give digitalin gr. 1-30 and strychnia gr. 1-30 subcutaneously.

In case of perforation radical surgical interference is at once demanded. If the surgeon is not at hand, give morphia subcutaneously to quiet peristalsis and relieve pain, and brandy and coffee by enema to sustain the heart.

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REPORT ON OBSTETRICS.

BY FRANK A. HIGGINS, M.D., BOSTON.

(Concluded from No. 7, page 181.)

THE SURGICAL TREATMENT OF PUERPERAL PYEMIA.

MICHELS[16] in his contribution limits pyemia to that form of puerperal infection which is propagated by way of the venous circulation, and is characterized by rigors with high rises of temperature, and usually leads after an acute course to a fatal termination by septic emboli in the lungs or other organs.

He cites five cases operated and reported by Trendelenburg, four of which proved fatal, and one less acute, which recovered after ligature of the right internal iliac and right ovarian veins.

Michels then reports a case of puerperal pyemia in his hospital practice, in which through the usual methods of treatment the local conditions had been greatly improved, the uterus had contracted and the fetid uterine discharge ceased, but the general condition continued very alarming, with very high temperature and repeated rigors. A distinct fullness was noted in the left inguinal region, which suggested a thrombosis of the ovarian vein. Accordingly an operation was performed, and the ovarian vein, which was thickened and dilated, was ligated in two places about half an inch below the renal vein, and then divided between the ligatures. The vein was then exposed to its point of exit from the broad ligament, slit open and a fetid mass of softened thrombus with small accumulations of pus removed. The effect of the operation was surprising — no more rigors occurred, the general condition improved rapidly and, although the wound healed slowly, it healed completely, and the patient left the hospital strong and well.

RECURRENT ABORTION.

Taylor[17] says that the usual term of "habitual" abortion is objectional, as the theory that the uterus can without any exciting causes form a habit of aborting at a certain period is only an idea, and that there is no longer any real justification for its continuance. He includes under the title of recurrent abortion only those cases where from the beginning or from some definite epoch the patient has aborted with each succeeding pregnancy.

[16] Lancet, January, 1903, p. 1025.
[17] Brit. Med. Journ., January, 1903, p. 835.

Of the rare causes of recurrent abortion a few are due to intraperitoneal adhesions, to chronic kidney disease with albuminuria and to deep lacerations of the cervix. When all these rarer causes of recurrent abortion are accounted for, and when syphilis can be rigidly excluded, there still remains a definite group of cases of very nearly equal importance to that belonging to syphilis. The distinguishing features which bind these cases together are (1) indications of a low vitality on the part of the mother or father, or both; (2) a strumous family history; and (3) what he calls the remarkable result of an essentially antistrumous treatment when carried on for a long period of time or throughout the whole of the pregnancy. Twelve of the latter type of cases are tabulated. In syphilitic cases each succeeding abortion, if the patient's general condition remains satisfactory, tends to occur at a later period, until the pregnancy goes to term. At this stage dead children are usually born, but finally living children may be expected. In the strumous class, unless something is done to improve the general health, each abortion tends to further weaken the patient, each succeeding abortion tends to occur at an earlier period, and finally in some untreated cases the power of conception is lost. In the majority of these cases there is a fairly clear family history of strumous disease.

He attaches chief importance to the defective vitality of the mother in these cases of recurrent abortion, and everything which tends to improve the general health of the mother and child is of the utmost importance in successful treatment.

PELVIC LESIONS FOLLOWING LABOR.

Hill,[18] in discussing the pelvic lesions following labor, says that in the occipito-anterior position it is of the very greatest importance that the nape of the neck be well under the pubes before the forehead is allowed to glide over the perineum. To insure this he often makes pressure on the perineum between the anus and coccyx. He would abstain from all rectal manipulations for this purpose, as he should not only fear injury to this organ, but also septic infection. At times he would advise to push the soft parts of the mother, anterior to the head, back under the pubes and thus favor the birth of the occiput. The patient should be directed to cease all voluntary efforts at expulsion. This is much helped by talking sharply to the patient and by delivery in the lateral-prone position, as the activity of the abdominal muscles is thereby lessened to a marked degree. Elevation of the lumbar region, when the patient is on her back, so as to increase the inclination of the pelvis, is strongly recommended by that master of obstetrics, Professor Schultze of Jena. The occipito-posterior position presents almost unlimited chances for destruction of the soft parts at the outlet. The careful obstetrician can, in a majority of cases, avoid this position by early assistance, rotating the head so that the occiput

[18] Am. Journ. Obst., January, 1903, pp. 81, 82.

will turn forward. Slow dilatation is of immense importance in avoiding perineal as well as cervical lacerations.

In speaking further of the avoidance of injuries, he refers to those extensive lacerations of the cervix occurring from application of forceps with an undilated and non-retracted cervix. He says we must first bear in mind that the operation is an exceedingly serious one, and that the avoidance of the injury lies in the fact that it must never be undertaken unless the indication is a most important one. When we are forced to it the prognosis should be a guarded one and every means exhausted to obtain a normal dilatation and retraction. At times it will be wise to incise the anterior or lateral lips of the cervix.

In speaking of the results of birth injuries, he refers to the immediate and the remote. The immediate is summed up by the likelihood of sepsis. The remote results are of the greatest importance and deserve our closest study. Too much stress cannot be laid upon the seriousness of some of these injuries, especially those produced by the forceps on the unretracted cervix. Some of the patients remain invalids for years; others never regain their health. The latter cases are those where there is great destruction of the cellular tissue in the base of the broad ligament and beneath the vagina. He insists that this condition is much more frequent than is ordinarily supposed and very serious to the well-being of the individual.

MECHANISM AND INSTRUMENTAL DELIVERY IN TRANSVERSE POSITIONS OF THE HEAD AT THE BRIM.

Gillespie[19] remarks on the great difference between low forceps and high forceps operations. Instrumental assistance with the head at the inferior strait is a safe procedure for any one who possesses reasonable operative judgment; forceps at the superior strait requires as much judgment for its proper performance as any obstetrical or gynecological operation with which he is acquainted. The intelligent use of forceps at the superior strait presupposes an exact knowledge of mechanical relations of the head to the pelvis and a careful differentiation of the cause of delay. If we may judge from text-book descriptions of the operation, this exact knowledge is seldom possessed, and the advantages of a differentiation of the cause of delay are frequently not appreciated. The rule generally followed of applying the blades to the sides of the pelvis, without regard to the diameter of the head grasped, is in his opinion as unscientific as would be an unvarying technique in hysterectomy for fibroids regardless of the shape and direction of the growth. Many have such a wholesome fear of the high forceps operation that they invariably perform version when the head is impacted in the brim. He says we cannot do better in the beginning than is stated by Robert Barnes: "In proportion as the head is low in the pelvis, high in the pelvis or above the brim, the necessity, utility and safety of forceps diminish."

Gillespie states that there are many conditions which render it advisable or necessary to apply forceps at the superior strait. He considers those conditions only which cause transverse positions of the vertex, such as flat pelvis. In these cases the head is not only transverse in the brim, but approaches that side of the pelvis toward which the occiput is directed, leaving the other side comparatively free. As the concave edge of the blade must be turned toward the occiput, it follows that the blade, which must find lodgment under the pubes, passes upon this comparatively empty side. There is, therefore, much less likelihood of the blade being nipped and held firmly between the side of the pelvis and the head than in the more normal oblique positions in which there is disproportion. So long as the sagittal suture is drawing nearer the pubes we should keep hands off; but when it begins to recede, showing that the point of contact with the promontory has become fixed, assistance comes within the range of possibility. Gillespie describes the method of applying the blade under these circumstances. A frequent cause of transverse position at the brim is an increased tilting of the brim as a result of excess of the sacrovertebral angle. Lack of flexion is another element in the problem of posterior rotation, which is intimately associated with abridgment of the conjugate. Three cases are reported.

PUBIOTOMY — LATERAL SECTION OF THE PUBIC BONE.

Gigli[20] has proposed and performed lateral section of the pubic bone by means of his chain saw, in place of the usual operation for symphyseotomy, in which the ligaments of the pubic joint are severed for obstructed labor. He has performed the operation several times, and the patients have all recovered with good results. He claims there is less hemorrhage, and the union of the bones is firmer and surer than at the joint, and that it is well known that many patients have loose pelvic articulations after section of the symphysis.

A number of cases of lateral section have been reported, two by Pistalozza,[21] who favors the new procedure. Two cases are also reported by Van de Velde,[22] who also warmly advocates the operation.

An incision is made from the left pubic spine downwards and inwards to the outer border of the labia majora, at the level of the vestibule. When the bone is reached, a cord is passed round it by means of a specially curved needle, and by this means a Gigli saw is drawn into place, and the pubis divided. A separation of the fragments to the length of about 5 cm. is obtained. After the child has been extracted, the periosteum is sutured with strong silk, and the lower

[19] Am. Journ. Obst., January, 1903.

[20] Zeitschr. f. Geburt. u. Gynäk., No. 4, 1903.
[21] Centralbl. f. Gynäk., No. 37, 1902.
[22] Peterson: Obstetrics, 1903.

end of the wound is left open to allow for drainage. A pelvic bandage should always be employed. The stitches can be removed on the seventh day. Van de Velde prefers pubiotomy to symphyseotomy for the following reasons: (1) The wound is not near bladder or urethra. (2) The soft parts round the divided bone are thicker than round the symphysis, so a laceration extending from the wound to the vagina is less likely to occur. (3) The distance of the operation site from the clitoris lessens the risk of hemorrhage. (4) The adductor longus and gracilis muscles prevent too great separation of the fragments. As a result, healing is more rapid and the chances of infection are less.

TREATMENT OF PLACENTA PREVIA.

De Lee,[23] basing his judgment upon thirty cases of placenta previa which he has had, says he feels justified in making the following statements:

(I) A woman with placenta previa ought not to die, except in rare instances, such as air embolism or the hemorrhagic diathesis.

(II) A case of placenta previa should not be half-heartedly treated. If the child is viable, labor should be induced. When the hemorrhage is very moderate one may wait, provided that the patient remains in bed and is in a well-appointed hospital.

(III) No one method of treatment will meet all cases. The accoucheur should have all known measures at his command.

(IV) The young practitioner should follow Schroeder, who says: "That accoucheur will have the best results in placenta previa who has the least regard for the child."

Medical writers whose words are read by the general profession, and medical teachers whose precepts are followed by, at first, blind and inexperienced hands, should be careful what they recommend for universal practice. One should recommend to those of less skill only such measures as in such hands may lead to the best results. The man with his first case of placenta previa, therefore, should direct his efforts to saving the mother. Later on, when the parturient canal is no longer a blank space, when dexterity has been acquired and, rarest and most difficult of attainment of all, obstetric judgment has become a possession of the accoucheur, he may make an earnest effort to improve the mortality of the child.

(V) Placenta previa is a formidable condition, more formidable than most laparotomies, and to insure the best results the patient should be in a well-equipped obstetric operating room.

(VI) The best way to induce labor is to puncture the bag of waters and to put a colpeurynter in the uterus, resting on the placenta and pressing this against the cervix, and then to put traction on the tube.

(VII) After labor is inaugurated, or should the case be received when it is already begun and hemorrhage more or less severe has occurred, the treatment should be pursued with vigor, and the doctor must not leave his patient till she is delivered and all danger is past.

(VIII) The treatment, then, is as follows:

The objects are: (1) to stop the hemorrhage; (2) to empty the uterus; (3) to secure contraction and retraction of the uterus; and (4) to ensure complete hemostasis. The state of the cervix and the degree of hemorrhage indicate the course to pursue.

[23] Am. Gynec., August, 1902, vol. i, No. 2, p. 152.

INTRAVENOUS INJECTIONS OF FORMALDEHYDE FOR PUERPERAL SEPSIS.

Much has been printed during the past six months on the subject of intravascular antisepsis, a large portion of which has no doubt been inspired by the publication of Barrows' case of puerperal sepsis, recovery of a very sick patient following the intravenous injection of 1,250 cc. of a 1 to 5,000 solution of formalin in normal salt solution.

The intravenous injection of drugs and even of formalin solutions for their antiseptic action is by no means a new suggestion or procedure, although the publication of Barrows' case, appearing as it did first in the lay press, produced rather an unusual amount of interest.

If Barrows' case had been published in the usual manner in a medical journal, without having first been widely advertised in the daily press, it is highly probable that it would have created no unusual interest or comment. This is true because cases quite as much *in extremis* as Barrows' have been known to recover under simple supportive treatment, or after the injection of normal salt solution, the use of antistreptococcus serum, Crede's ointment and various other forms of treatment which have from time to time been lauded as specifics for septicemia, but all of which have subsequently proved disappointing.

It is perhaps too early to pronounce at the present time a final verdict on the use of formalin as described, but what clinical evidence we possess points to the conclusion that the favorable result in Barrows' case may have been merely coincident or may have been due to several other factors.

In the *Lancet* of Jan. 10, 1903, three weeks before the publication of Barrows, Fortesque-Brickdale, in a paper on "Intravascular Antisepsis," from the Bacteriological Department of the Jenner Institute of Preventive Medicine, says that the idea that drugs might advantageously be administered by direct injection into the circulation was first started by an English mathematician, and had its latest exponent in an Italian cabinet minister. Sir Christopher Wren in 1656 was the first to carry out the experiment, and the medical profession has coquetted with the method ever since, exaggerated enthusiasm for it alternating with absolute neglect. He gives the results of a number of laboratory experiments upon animals in the injection of various drugs, and in conclusion says that at present there is no experimental evidence which would warrant the

assumption that the course of a septicemia in animals can be influenced favorably by the intravenous injection of antiseptic substances, and that in view of his results and those obtained by former investigators, it seems useless to continue trying to apply clinically a method which, while not free from special dangers, is at present unsupported by any experimental evidence either as to its present advantages or future prospects.

Park and Payne in the *Medical News* for April 4, 1903, report the results of their experiments on the intravenous injection of dilute formalin solution in septicemic rabbits. Their work was done at the Research Laboratory in New York after the report of Dr. Barrows' case. Their results agree with those of Fortesque-Brickdale quoted earlier, and their conclusions are essentially the same with regard to the dangers and inutility of formalin injections, while they also demonstrated that even after large doses of formalin the streptococci can still increase in the blood.

Barrows[24] in a recent communication defends the use of intravascular antiseptics, claiming that experiments made on rabbits with unfavorable results do not necessarily represent the conditions in the human subject. He reports a number of cases successfully treated. He says he does not wish to stand as a champion for the single chemical element which has given such satisfaction in his hands, but he believes that from a study of his cases other lines of treatment in this direction may be stimulated.

Reports of Societies.

FIFTY-FIRST ANNUAL MEETING OF THE MAINE MEDICAL ASSOCIATION.

THE fifty-first annual meeting and semi-centenary celebration of the Maine Medical Association was held in Portland, June 3, 4 and 5, 1903. On the recommendation of the president for the preceding year, Dr. F. H. Gerrish, the exercises throughout partook of a special character. The only papers presented were of an historical character, but the reports of special committees were of unusual interest and called out a very free discussion.

FIRST DAY — MORNING SESSION.

The meeting was called to order by the president, DR. HIRAM HUNT of Greenville, at 10.30 o'clock.

DR. AUGUSTUS THAYER of Portland read his report as treasurer, showing a balance of $2,378.91, notwithstanding the fact that $1,000 had been appropriated during the year for the proposed Maine Sanatorium for Consumptives.

DR. ADDISON S. THAYER presented the report of the Committee on Change of Laws Governing the Commitment and Discharge of the Insane.

[24] N. Y. Med. Journ., Jan. 31, 1903, p. 177; *ibid.*, July 4 and 11, 1903, pp. 5 and 65.

"According to present law in Maine, a person who desires the commitment of another person alleged to be insane, must sign in writing a formal complaint. A copy of this complaint must be given in hand to the person alleged to be insane. The alleged insane person must also be notified of the time and place of a hearing, and that he has the right and will be given an opportunity then and there to be heard."

Judge Walton in 1888 in the Knox County Court ruled:

"When an adjudication is to be made which will seriously affect the rights of a person, he should be notified and have an opportunity to be heard." "We do not find any decision in this state or Massachusetts which holds directly and positively that such a notice is necessary."

To avert doubt as to the legality of future commitments the last legislature amended the statutes so that they conform to the principles laid down by Judge Walton.

The committee expressed the belief that the commitment of persons who are not insane rarely occurs. They advised firmness on the part of hospital authorities to prevent the premature discharge of insane patients.

DR. B. T. SANBORN, superintendent of the Maine Insane Hospital, in discussing the report said that he wished to call attention to a new law passed by the legislature relative to the admission of patients to an insane hospital.

There must be *legal* evidence that two reputable physicians have testified to the fact of insanity, and no person shall be deprived of his liberty without legal commitment. Regarding the premature discharge of insane patients, Dr. Sanborn spoke of the formerly overcrowded condition of the Maine Insane Hospital and the necessity of always receiving and retaining the more dangerously insane, and this had made it necessary to discharge others whose condition was not so bad.

It was voted that the committee be retained to secure suitable laws, if possible, from the next legislature.

The Committee on Legislation Regarding Victims of Drug Habits reported progress, and was retained for another year.

In discussing the subject DR. W. L. HUNT said that he would like to have the insane law stretched over the inebriate, somewhat similar to the Massachusetts law, and spoke of the difficulty of committing an individual insane through drink. He believed that such patients should be admitted to the insane hospital.

DR. F. H. GERRISH of Portland suggested that the committee endeavor to obtain from the next legislature an adequate and proper law.

DR. B. T. SANBORN spoke of the difficulties attending voluntary commitment, and expressed his opinion that an insane hospital was not the proper place for inebriates and drug habitués. He expressed the hope that a suitable institution for the care of such patients might be established by the state.

DR. S. C. GORDON favored a law enabling a

drunkard to be confined in an insane hospital or similar institution.

DR. F. H. GERRISH of Portland said: Patients addicted to the use of drugs have their moral sense completely blunted, and it is extremely difficult to manage such cases. I believe that a law should be framed by which a man might voluntarily relinquish his liberty for a stated period. In this way the physician could control his patient and not be liable for false imprisonment.

DR. WALTER ELWELL, superintendent of the National Soldiers' Home at Togus, endorsed Dr. Gerrish's views.

DR. B. B. FOSTER of Portland spoke of the necessity of absolute control by the physician of inebriates and drug habitués, but believed that it would be extremely difficult to secure such a law.

It was voted that the committee be continued to the next annual meeting.

DR. G. M. ELLIOTT of Brunswick presented the report of the Committee on the Expediency of Adding Venereal Diseases to the List of those reported to the Board of Health.

The committee proposed a legislative act:

(1) To add syphilis and gonorrhea to the list of diseases to be reported.

(2) To provide free treatment for patients with these diseases.

(3) To restrict the marriage of such as have a communicable form of either disease.

(4) To penalize the wilful spreading of either of these diseases.

(5) To have the State Board of Health prepare a circular such as is now prepared for some of the other diseases, and require each physician to give the patient a copy in each newly seen case, and certify to the local board of health that such patient has been given a copy.

DR. F. H. GERRISH said: This deals with an important subject, though an old one. Twenty-five years ago I made similar suggestions regarding prostitution, and brought the subject to notice again a year ago, and this matter has been conducted with the utmost deliberation. We should add gonorrhea and syphilis to the list of reportable contagious diseases. An effort to obtain the venereal morbidity in New York showed 225,000 cases as against 41,145 reported diseases in one year. In our meeting last year Dr. Oakes referred to gonorrhea as "this most hideous disease," and yet spoke against securing legislation. Some of the objections urged against the passage of this law are: That it could not go through the legislature on account of the sympathy of members who may have been afflicted; that it would drive these cases to druggists and quacks for treatment; that doctors would not report cases since cases of tuberculosis are not reported; and that it is bad to have a law on the books that is not enforced.

The law against fornication is not enforced, and the law against theft only brings to justice a fractional part of the offenders; but they should remain laws to apply when possible.

It is said that to report these cases would be a violation of professional secrecy; but, if the law compelled, there would be no ground for complaint. The proposed law would have an educational value, as the law against spitting in public places has a salutary effect. The law does not contemplate isolation and is for the advancement of public welfare. We do not hesitate to enforce the law in scarlet fever; why should we in these diseases? The medical profession needs education on these points.

DR. GUSTAV PUDOR advised licensing brothels, as the plan had worked well in Berlin and afforded protection from contagion. He believed that pupils in the upper classes of grammar schools should be instructed on the dangers of such matters.

DR. B. B. FOSTER said that in his judgment the proposed law could not be enforced if adopted. It would certainly drive the treatment of these diseases into the hands of the druggists. He spoke of the great prevalence of gonorrhea and syphilis, and showed that the former was much the more serious disease. He believed that young men should be educated in these matters, and favored legislation that would limit the treatment of these diseases to competent physicians. He estimated that 70% of the male population over the age of thirty-five had had gonorrhea.

DR. WALTER B. ELWELL of Togus said: I think that Dr. Foster has overestimated the extent of venereal diseases. I have examined thousands of men and believe that, counting both syphilis and gonorrhea among old soldiers, 52% is a high estimate.

DR. JOHN F. THOMPSON, Portland, said: The administration of drugs by pharmacists is to be especially condemned. Patients of this class should be treated by qualified physicians and specialists rather than by general practitioners. The proposed law, I believe, is too radical; and I hold that we must approach the desired end gradually. I do not believe that the simple reporting of cases will do any good.

It was voted that the committee be retained for another year and that it appoint a delegate or delegates to the Congress of Venereal Diseases at St. Louis in 1904.

FIRST DAY — AFTERNOON SESSION.

The delegates to other societies and institutions presented their various reports, after which DR. HIRAM HUNT of Greenville delivered the

PRESIDENT'S ADDRESS.

Dr. Hunt called attention to the special character of this meeting, and said: "As it is fitting that everything connected with the association should be reviewed, so it will be profitable to study all things medical, to note the progress of surgery since the organization of this association and before, to note, also, the progress in every branch of medicine." He spoke of the great value of medical societies, with special

reference to their contributions to education and mutual professional improvement. He called attention to the various legislative acts that the Maine Medical Association had been instrumental in securing. Regarding county societies, he said: "During the past year one condition has been forcibly brought to my attention, and that is the absence of union between this association and the county societies. If a satisfactory plan could be adopted which would unite this association and the county societies, it would probably result in a large membership in both, a better organization of the profession of the state and be mutually advantageous.

"The American Medical Association plan for organizing the profession has been adopted in eighteen states. I am not convinced that this plan is advisable for our association, but any plan, especially one recommended by the American Medical Association, with whom our association has always been affiliated, should have careful and respectful consideration. I suggest that a committee be appointed to consider the plan advised by the American Medical Association, to report at the next annual meeting."

DR. CHARLES O. HUNT of Portland then read a paper on

THE HISTORY OF THE ASSOCIATION.

The association gave Dr. Hunt a vote of thanks and also voted that the paper be published in the Transactions.

SECOND DAY.

Instead of a business session in the morning, an exhibition of Curiosities and Anomalies of Medicine was held in the amphitheater of the Maine General Hospital. Physicians from all over the state brought patients afflicted with rare diseases and unusual deformities. The list included many congenital malformations, some of the rarer diseases of nutrition and a collection of remarkable skin diseases.

The following cases were among those exhibited: General anchylosis, cretinism, congenital absence of fingers, fibroma of nose involving entire face, congenital dislocation of hips, acanthosis nigracans, ichthyosis, psoriasis, general eczema and sycosis.

The exhibition, which was under the charge of Dr. Frederic H. Gerrish for the Business Committee, lasted over two hours, and was greatly appreciated.

SECOND DAY — AFTERNOON SESSION.

The president introduced as delegate from the New York State Medical Association, its president, DR. FREDERICK HOLME WIGGIN, who made a brief address referring to the work of his association.

DR. T. F. GARTLAND of the Vermont Medical Association was introduced as its delegate.

The Committee on the President's Address recommended that "a committee of organization be appointed to act on the plan proposed by the American Medical Association." By vote of the association, such a committee was appointed.

The Board of Censors advised the management of the medical exhibit by the association, or that investigation be made regarding its control. A committee was appointed for this purpose.

DR. J. L. M. WILLIS of Eliot read a paper on

THE HISTORY OF MEDICINE IN MAINE PRIOR TO 1853.

DR. WILLIS B. MOULTON of Portland read a paper on the

HISTORY OF MEDICINE IN MAINE OUTSIDE THE ASSOCIATION SINCE 1853.

Both papers were referred to the committee for publication.

DR. CHARLES D. SMITH spoke in favor of a national act of incorporation of the American Medical Association, and it was voted that the delegate favor this act.

DR. S. H. WEEKS spoke for the Maine Sanatorium Association, reported progress and called for a motion that the association appropriate fifty dollars a year for the benefit of the institution. The motion was put and called out some discussion, as the association at the previous annual meeting had donated one thousand dollars. It was finally voted that fifty dollars be appropriated annually for ten years.

The president called attention to the presence of two of the charter members, and introduced DR. ALONZO GARCELON of Lewiston and DR. CYRUS KINDRICK of Litchfield Corner.

The officers for the next year are: President, Dr. Augustus S. Thayer, Portland; Secretary, Dr. Walter E. Tobie, Portland; Treasurer, Dr. Arthur S. Gilson, Portland.

In the evening a banquet was held at the Lafayette Hotel. There were present two hundred members and guests of the association.

The third day, June 5, was devoted to a sail in Casco Bay and a shore dinner on Long Island. The physicians and their wives, to the number of two hundred, took part in this event, which concluded the program. A special effort had been made to have as many physicians as possible attend the meeting accompanied by ladies. The visiting ladies received every possible attention. Many were entertained by the wives of the Portland doctors, and a committee of ladies called on all visitors whose addresses could be obtained. Mrs. John F. Thompson held a reception on Wednesday afternoon. Thursday morning the ladies enjoyed a trolley ride about Portland, finishing with a lunch at Riverton.

On the evening of June 8 the association had reserved for them two hundred seats at the Jefferson Theater, and with their ladies attended a performance of "The Conquerors."

THE BOSTON

Medical and Surgical Journal

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PROGRESS IN THE TREATMENT OF THE DEPENDENT POOR.

A FEW days since an editorial appeared in the Boston *Herald* calling attention to the improved public spirit prevailing in New York toward its dependent poor, commonly known as paupers. The term "pauper" has acquired a most unenviable reputation, and the first step apparently in an amelioration of the condition and the elevation of the self-respect of these dependent persons is to change this term to one perhaps having a similar significance, but less unpleasant associations. In New York the word "ward" has been substituted, and possibly, owing to this fact, the dependent class is undergoing a distinct change for the better. A so-called farm colony has been established on Staten Island, and in the course of time an administration building, chapel and an adequate number of cottages are to be erected for the comfortable housing of the poor. Aged married couples are to be permitted to live together until one or the other dies, whereas in former times such persons, having become dependent upon the city, were separated. By these general means it is suggested that a beginning may be made toward the realization of Mr. Jacob Riis' hope that ultimately the charitable institutions on the East River Islands may be removed to make way for island parks for the poor.

A similar idea to that described above had been suggested also for Boston, as may be seen by reference to the report of 1902 of the pauper institutions' trustees, wherein the following statement is made:

> The difficulties of classifying an almshouse population seem to be inherent where so many feeble persons are housed, fed and cared for together. A plan which has been suggested, and which might tend to obviate some of the disadvantages of the congregate system of housing, would be to provide a number of cottage almshouses, with separate establishments, where each household could fulfill the duties of caring for the building and adjacent grounds without requiring so much assistance from officers as is necessary in a large institution.

The *Transcript*, in an editorial, comments on this suggestion, and accounts for the fact that the change has never been carried out in Boston owing probably to the fact that the institutions are established on a different basis, and that such a change would involve a very considerable expense. It is, however, worthy of mention that the plan which has apparently been carried to a successful issue in New York, had already been suggested for the poor of Boston.

It is in general of very great interest to note from time to time the change in public sentiment which is going on in regard to those who through misfortune or illness, or even through their own fault, are forced into public institutions. We have frequently enough commented upon the change of the word "asylum" to "hospital," and we may look forward with confidence to a gradual awakening of public opinion to the injustice of the situation which condemns persons suffering from chronic disease to the declaration of pauperism before they may be cared for by the city or state of which they may chance to be citizens. The distinction should most certainly be drawn between that class in the community which is able-bodied and which simply, through lack of initiative or viciousness, refuses to work and that increasingly large class of individuals who through illness is condemned to a life of idleness. These latter should be forthwith regarded as sick persons, and any social stigma attaching to them should be removed, so long as they remain in the condition of invalids. In time, no doubt, the idea of hospitals for chronic disease will gain weight and strength sufficient to set right many of the injustices which now prevail.

ETIOLOGY OF YELLOW FEVER.

LITERATURE on yellow fever is becoming abundant. We have before us one of the most recent contributions to the general subject, being the Report of Working Party No. 1 of the Yellow Fever Institute, published under the auspices of the Treasury Department of the Government. This party consisted of Assistant Surgeon Herman B. Parker and Acting Assistant Surgeons George E. Beyer and O. L. Pothier. The work was

undertaken at Vera Cruz, Mexico, and was continued from May until October, 1902, with the assistance of the Mexican Government. The object was to investigate particularly yellow fever and other diseases common to Mexico and the United States. The report which has been submitted to the Government of the work accomplished is an admirable, brief presentation of what has already been learned regarding the relation of the mosquito to yellow fever and of the added knowledge which this special investigation has brought.

To persons unfamiliar with the extremely interesting history of the development of our knowledge regarding the etiological rôle of the mosquito, this pamphlet may be read with great profit. A brief description is given of the *Stegomyia fasciata*, its natural breeding places and its importation into this country. It may not be generally known that this species of mosquito is not native to the United States, but has become domesticated largely through the medium of commercial intercourse. As a result of this invasion, certain infected regions may be marked out with a considerable degree of accuracy, and this has been done with much benefit to future students of the disease. The chief aim of the working party to which we have alluded was the identification and classification of the specific organism of yellow fever, a matter which has hitherto remained undecided.

The writers of the report give an excellent synopsis of previous investigations, giving very justly much credit to Major Reed, whose work in connection with the scientific proof of the mosquito theory, earlier advanced by Finlay, is now universally known. In carrying out the further investigation, Dr. Parker and his colleagues studied with much care fresh blood microscopically and bacteriologically, made bacteriological examination of organs at autopsy and conducted various experiments relating to the transmission of the disease by mosquitoes. All of these facts and very many others of much interest are given in a space of forty-eight pages, to which are added forty-three very beautiful illustrations of the mosquito *Stegomyia fasciata*, both in its macroscopic and microscopic relations. These illustrations are by far the most elaborate in color and execution that we have seen on this subject, and should be given wide circulation in connection with the accompanying text. The general conclusions which the writers reach on the subject are included in the following four statements:

That the bacteriological examination of the blood of cases of yellow fever during life and the blood and organs at autopsy performed immediately after death in uncomplicated cases is negative.

That *Stegomyia fasciata*, when contaminated by feeding on a case of yellow fever forty-one and a half hours after the onset of the disease and subsequently fed on sugar and water for twenty-two days one and a half hours, can, when permitted to feed on a non-immune individual, produce a severe attack of the disease.

That *Stegomyia fasciata*, contaminated by feeding on a case of yellow fever and after varying periods killed, sectioned and appropriately stained, presents with regularity a protozoan parasite, the *Myxococcidium stegomyiæ*, that can be traced through a cycle of development from the gamete to the sporozoite.

That *Stegomyia fasciata* fed on blood from a case of malarial fever, on normal blood or artificially fed, does not harbor the parasite.

The importance of this work and the addition which it brings to our knowledge of the subject can hardly be questioned.

THE DIAGNOSIS OF INSANITY AT SIGHT.

A PAPER which departs very widely from the usual type presented at medical meetings was read by Dr. Steven Smith of New York at the meeting of the American Medico-Psychological Society recently held in Washington. The subject of this communication was "How Dr. Brigham Met the Challenge to Diagnose Insanity at Sight." This paper was regarded as having so large an element of popular interest that it has been republished, we presume in full, in a recent number of the *Outlook*. We question somewhat whether this contribution should lay claim to medical value, but we are nevertheless of the opinion that such a variation of the routine of medical meetings, when told in the delightfully graphic style of this paper, must be welcome in the sometimes gloomy waste of so-called scientific productions.

The story narrated by Dr. Smith simply is that during the period toward the end of the first half of this century, when the negro question was already under active discussion, a negro was suspected of the crime of murder. He later confessed to the crime, but showed such signs of mental alienation that the incensed public feared his escape from justice on this ground.

When his trial finally took place, after threats of lynching had been successfully met, William H. Seward, Esq., impressed with the belief that the negro was insane, and also eager to stand between him and the popular clamor for his death without trial, undertook the defence. The details of the trial are told with much vividness, but the climax was reached when Dr. Amariah Brigham, then superintendent of the Asylum for the Insane at Utica, was called as an expert for the defence. He believed in the man's insanity, and, after undergoing with much composure a cross-examination of great severity at the hands of the prosecuting attorney, he finally was asked the question whether or not he could diagnose insanity at sight. Dr. Brigham replied emphatically that he could. He was then called upon by the attorney-general to point out to the court and jury an insane person in the audience. Rising from his chair, Dr. Brigham scanned with keenest scrutiny row after row of those who were witnessing the trial. After five hundred faces had been studied, he finally fixed his attention upon a certain person, stretched out his arm, pointed his finger toward one of the rear rows of seats, and said, "There is an insane man." The event justified his diagnosis, and the lunatic — for such he was — was finally removed with difficulty from the court room. This practically ended the trial, but the issue of the case was the conviction of the criminal for murder in the first degree. It was a concession to public opinion. He died later in prison, completely demented.

The final statement of the account, as given in the *Outlook*, is "an autopsy confirmed the correctness of the defence — insanity." All of this is most entertaining as a story which should be kept alive, but as a contribution to medical literature we are compelled to feel that it overshoots the mark. Even now the diagnosis of insanity, as ordinarily understood, by a study of the brain, is often impossible, nor have we reached that stage of perfection in observation which permits us to detect the signs of insanity in many a person who has passed beyond the bounds of reason. This, however, occurred in 1846, and it may be that our more refined methods of diagnosis have detracted somewhat from the powers of observation which Dr. Brigham is claimed to have so fully developed. This, at least, is a charge which is occasionally brought against the modern physician, and possibly this entertaining story may give it weight.

DR. MORRILL WYMAN.

IN this issue of the JOURNAL we offer a contribution to the memory of the late Dr. Morrill Wyman of Cambridge. The physician, however great his professional reputation may have been, usually receives at his death but scant acknowledgment from the world at large unless his life work has led him quite beyond the bounds of medical science. Dr. Wyman was a man whose personality and good citizenship, as well as his conspicuous contributions to medical knowledge, make such a memorial as this which we publish to-day peculiarly fitting. The writers, all prominent in the professional life of this and the neighboring city of Cambridge, knew Dr. Wyman personally, and each in his own way adds something of appreciation to the brilliant record of the great Cambridge physician. No doubt such a tribute, coming from his colleagues, would have been far more welcome to Dr. Wyman than a more fulsome, but less appreciative, because less well-informed, estimate of his character and work.

MEDICAL NOTES.

THE ENGLISH CANCER RESEARCH FUND.— The first annual meeting of the committee of the Cancer Research Fund was held in London, July 13, under the chairmanship of the Hon. A. J. Balfour. The work has been prosecuted for so short a time that nothing definite in the way of progress was given out at the meeting. It was, however, stated that the scheme of investigation proposes wide study in the various lines which may lead to a solution of the ultimate problem. To carry out this proposed plan Mr. Balfour very wisely places much stress upon the fact that in a research of this character immediate results may not be expected, and that to carry out such an investigation to its end requires a very large financial backing. It was further stated that £43,000 are still needed for the completion of the endowment.

REGISTRATION OF CONSUMPTIVES. — An ordinance has become law in Kansas City, according to the *Journal of the American Medical Association*, without the approval of the mayor, which provides that all persons suffering from consumption in an infectious stage must be registered with the board of health and must follow the instructions as to isolation and treatment made in each case by the city physician. The lay press says that the law is aimed primarily at the negroes, a large percentage of whom have con-

sumption, and who in their conduct on the streets and in crowds show no care for the danger to public safety from the germs of the disease.

INTERNATIONAL GOLF. — The *British Medical Journal* informs us that the annual golf match between members of the British Medical Association was played on the links of the Swansea Club. The course is very sporting and although the weather was showery the round was most enjoyable. It was agreed to make the sides England *v.* the Rest of the World. The game ended in favor of England by 8 matches to 2.

BEQUESTS TO IRISH HOSPITALS. — One result of the visit of King Edward to Ireland appears to be a bequest of $250,000 from Lord Iveagh for the benefit of both Catholic and Protestant hospitals in Dublin. This amount of money is given in memory of the King's visit.

HOSPITAL BUILDING IN NEW YORK STATE. — The *New York Medical Journal* makes note of the following activity in the construction of hospitals in New York State: At Albany a hospital for contagious diseases is about to be built, the ground for which has already been broken. Improvements are also being made in St. Peter's Hospital of the same city. At Buffalo $125,000 has been appropriated for a new marine hospital, of which $100,000 are to be expended for the building. In New York City, Bellevue Hospital has acquired additional land, which will be used for the enlargement of its buildings. The cost of this work is estimated at about two million dollars. Under the auspices of Dr. Peterson, president of the State Commission in Lunacy, it is also announced that a site in Washington County will be purchased for the erection of a new insane hospital, the necessity for which is brought about by the overcrowding at the King's County Institution. The final cost will probably exceed one million dollars, although the commission at present has but $50,000 appropriated by the last legislature.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Aug. 19, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 24, scarlatina 9, typhoid fever 20, measles 9, smallpox 0.

BOSTON MORTALITY STATISTICS. — The number of deaths reported to the Board of Health for the week ending Aug. 15 was 207, as against 201 the corresponding week last year, showing an increase of six deaths and making the death-rate for the week 17.88. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 22 cases, 4 deaths; scarlatina, 19 cases, no deaths; typhoid fever, 19 cases, 5 deaths; measles, 12 cases, no deaths; tuberculosis, 16 cases, 15 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 10, whooping cough none, heart disease 13, bronchitis 2, marasmus 7. There were 13 deaths from violent causes. The number of children who died under one year was 66; under five years, 69; persons over sixty years, 35; deaths in public institutions, 62.

TYPHOID FEVER AT LOWELL. — It is reported that since Aug. 1 about twenty-five cases of typhoid fever have appeared in Lowell as contrasted with none during the same period last year. The outbreak is attributed to the fact that by accident river water gained access to the city mains during the excitement consequent upon a fire. Measures will probably be taken to prevent the recurrence of such an accident.

NEW YORK.

REGISTRATION OF BARBERS. — The registration of barbers, in accordance with the act passed at the last session of the Legislature, was completed in New York on August 15, and the President of the Board of Health has announced that the rules for barbers carrying out the provisions of the Sanitary Code required by the act will be rigidly enforced after Sept. 1. Among them are rules prohibiting the use of sponges and of powder puffs. Other rules are the following: Combs, razors, clippers and scissors must be thoroughly cleansed by dipping them in boiling water or other antiseptic after every separate use thereof. No alum or other astringent shall be used in stick form. If used at all to stop the flow of blood, such application must be made in the form of powder.

A NEW DISPENSARY. — The Sydenham Society, a new organization which is apparently composed of Jewish physicians, has opened a dispensary and small hospital in East 116th Street. The lower floor of the building is used for the out-patient department and on the upper floors are accommodations for twenty patients.

A CENTENARIAN. — Mrs. Alice Baudette, whose two brothers served as soldiers in the War of 1812, died at Glens Falls, N. Y., on August 13, at the reputed age of one hundred and three years.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 8, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,233	525	40.55	6.59	1.78	21.57	.10
Chicago . . .	1,885,000	514	212	41.82	5.64	1.56	26.45	2.13
Philadelphia	1,378,527	—	—	—	—	—	—	—
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	179	75	37.98	3.91	—	17.87	5.59
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	—	—	—	—	—	—	—
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee . .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	74	35	37.82	8.10	—	25.66	.13
Boston . . .	603,163	170	77	22.25	7.65	.58	13.53	1.76
Worcester . .	132,044	42	24	40.47	2.38	—	35.71	—
Fall River . .	115,549	54	36	33.33	5.55	—	27.78	—
Lowell . . .	101,959	66	35	37.87	1.51	—	33.33	—
Cambridge . .	98,639	18	8	61.10	—	—	44.44	5.55
Lynn	72,497	21	7	14.28	—	4.76	—	—
Lawrence . . .	69,766	19	10	47.37	5.26	—	36.84	—
Springfield .	69,389	24	7	25.00	12.50	—	16.67	—
Somerville .	68,110	16	8	25.00	12.50	—	12.50	—
New Bedford	67,198	46	27	52.17	2.17	2.17	43.48	4.35
Holyoke . . .	49,286	22	13	27.27	9.09	4.54	18.18	—
Brockton . .	44,873	6	1	16.67	—	—	—	—
Haverhill . .	42,104	9	6	22.22	—	—	22.22	—
Newton . . .	37,794	9	2	55.55	—	11.11	22.22	11.11
Salem	36,876	10	6	60.00	—	20.00	30.00	—
Malden . . .	36,286	11	8	54.54	—	—	54.54	—
Chelsea . . .	35,876	17	8	—	—	—	—	—
Fitchburg . .	35,069	8	4	—	—	—	—	—
Taunton . . .	33,656	8	5	37.50	12.50	—	37.50	—
Everett . . .	28,620	7	—	28.60	—	—	14.30	—
North Adams	27,862	8	5	62.50	—	12.50	25.00	—
Gloucester .	26,121	6	2	—	—	—	—	—
Quincy . . .	26,042	10	2	50.00	—	—	20.00	—
Waltham . .	25,198	6	1	16.67	—	—	—	—
Brookline . .	22,608	5	2	60.00	—	—	40.00	—
Pittsfield . .	22,589	—	—	—	—	—	—	—
Chicopee . .	21,031	7	5	42.90	—	—	42.90	—
Medford . .	20,962	4	—	25.00	—	—	—	—
Northampton	19,883	8	4	—	—	—	—	—
Beverly . . .	15,302	3	1	33.33	—	—	—	—
Clinton . . .	15,161	1	—	—	100.00	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	4	0	—	—	—	—	—
Woburn . . .	14,300	8	—	62.50	12.50	—	25.00	—
Hyde Park .	14,175	6	3	66.67	—	—	33.33	—
Adams . . .	13,745	8	3	37.50	—	—	12.50	—
Attleboro . .	13,677	3	2	66.67	—	—	66.67	—
Marlboro . .	13,609	—	—	—	—	—	—	—
Melrose . . .	13,600	—	—	—	—	—	—	—
Westfield . .	13,418	11	8	9.09	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	1	1	—	—	—	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	5	4	80.00	—	—	20.00	—
Weymouth .	11,344	5	1	80.00	—	—	—	20.00
Southbridge .	11,268	2	—	—	—	—	—	—
Watertown .	11,077	2	—	—	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 2,696; under five years of age, 1,183; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,039, acute lung diseases 153, consumption 272, scarlet fever 21, whooping cough 21, cerebrospinal meningitis 18, smallpox 1, erysipelas 4, measles 11, typhoid fever 42, diarrheal diseases 611, diphtheria and croup 38.

From whooping cough, New York 10, Chicago 5, Baltimore 3, Providence 1, North Adams 1, Hyde Park 1. From erysipelas, New York 1, Chicago 1, Woburn 2. From smallpox, Fall River 1. From scarlet fever, New York 13, Chicago 1, Baltimore 4, Providence 2, North Adams, 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending July 25, the death-rate was 13.4. Deaths reported, 3,874; acute diseases of the respiratory organs (London) 132, whooping cough 74, diphtheria 49, measles 111, smallpox 5, scarlet fever 40.

The death-rate ranged from 5.7 in Tottenham to 21.1 in Great Yarmouth; London 12.7, West Ham 10.4, Brighton 12.5, Portsmouth 10.4, Southampton 10.4, Plymouth 15.4, Bristol 9.7, Birmingham 14.1, Leicester 13.0, Nottingham 11.2, Bolton 19.2, Manchester 16.0, Salford 15.7, Bradford 12.9, Leeds 16.6, Hull 13.0, Newcastle-on-Tyne 12.4, Cardiff 12.7, Rhondda 14.4, Liverpool 18.0, Bury 20.6, Wigan 14.3.

METEOROLOGICAL RECORD.

For the week ending Aug. 8, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. 2	30.38	68	78	58	83	75	64	N W	E	8	2	C.	F.	0
M. 3	30.34	64	69	59	79	89	84	N	E	6	6	O.	.C	0
T. 4	30.23	59	64	54	83	85	84	N E	S	3	8	O.	R.	.11
W. 5	30.02	58	59	56	91	96	94	E	N E	14	16	R.	R.	1.00
T. 6	29.95	60	62	58	96	97	96	N E	S E	11	9	R.	R.	.32
F. 7	29.84	68	78	58	97	64	80	S W	W	6	10	R.	C.	.12
S. 8	30.02	60	67	52	59	71	65	W	S W	7	10	C.	C.	0
☞	30.11		68	56			81							1.55

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING AUG. 6, 1903.

PETTUS, W. J., assistant surgeon-general. Granted leave of absence for twenty days from Aug. 10. Aug. 5, 1903.

AUSTIN, H. W., surgeon. Granted leave of absence for one month from Aug. 6. July 30, 1903.

CARTER, H. R., surgeon. Granted leave of absence for one month from Aug. 4. Aug. 1, 1903.

STONER, J. B., surgeon. Granted extension of leave of absence for one month from Aug. 1. July 28, 1903.

NYDEGGER, J. A., passed assistant surgeon. Relieved from duty at Sault Ste. Marie, Mich., and directed to proceed to the Immigration Depot, New York, N. Y., and report to Surgeon G. W. Stoner for assignment to duty. Aug. 3, 1903.

ANDERSON, J. F., passed assistant surgeon. To proceed to Marietta, Conewaga and Swiftwater, Pa., and Baltimore, Md., for special temporary duty. Aug. 5, 1903.

DECKER, C. E., assistant surgeon. Granted extension of leave of absence, on account of sickness, for fifteen days from July 15. July 20, 1903.

APPOINTMENTS.

Norma Roberts of Pennsylvania, George L. Collins of Massachusetts, Harvey G. Ebert of Washington, William M. Wightman of California, Herbert M. Manning of the District of Columbia and Frederick C. Smith of Minnesota, commissioned as assistant surgeons (recess) in the Public Health and Marine Hospital Service. July 25, 1903.

PROMOTION.

G. W. Iltis, pharmacist of the third class, promoted to be pharmacist of the second class, effective April 24, 1903.

REINSTATEMENT.

William C. Phillips reinstated as pharmacist of the third class. July 15, 1903.

Pharmacist H. E. Davis suspended from duty and pay for a period of thirty days from July 27, 1903.

RECENT DEATHS.

MICHAEL F. MCGRATH, M.D., died at Fishkill-on-the-Hudson on Aug. 11, of pulmonary tuberculosis. He was thirty-five years of age and a graduate of St. Francis Xavier College and the College of Physicians and Surgeons, New York.

BOOKS AND PAMPHLETS RECEIVED.

Handatlas der Anatomie des Menschen mit Unterstützung. Von Wilhelm His, Professor der Anatomie an der Universität Leipzig bearbeitet von Werner Spalteholz ao. Professor an der Universität Leipzig und Custos der anatomischen Sammlungen. Dritter Band, 2. Abtheilung. Leipzig: Verlag von S. Hirzel. 1903.

Verhandlungen des Vierten Nordischen Kongresses für Innere Medizin. 1902.

Ureteritis in the Female. By Edgar Garceau, M.D., of Boston. Reprint. 1903.

Some Therapeutic Uses of the X-Ray. By W. P. Spring, M.D., Minneapolis, Minn. Reprint. 1903.

Original Articles.

THE INVALID'S EGYPT.

BY F. GORDON MORRILL, M.D., BOSTON.

EGYPT of the invalid and Egypt of the tourist differ essentially in many respects; and while I have defined the intention of this paper by its title, there are portions of it which apply to the robust "globe trotter" — for there are certain precautions which should be observed by all who visit the country, whether for health or pleasure.

One's preconceived notions of the Egyptian climate are seldom correct; for notwithstanding all that has been said and written about it, the average person still fancies that it never rains in the Land of the Pharaohs, that the air is everywhere balmy, and pictures himself as dressed in white ducks and being borne up the Nile by gentle zephyrs (or steam power) from Cairo to Wadi Halfa.

Now as a matter of fact there are two Egypts, an Upper and a Lower, and these two sections differ as much in temperature and relative humidity as do Boston and Washington, or Paris and Nice.

It can rain as hard in Cairo as in New York (though far more seldom), and as for the Nile, it is often very cold during the season when foreigners are likely to be on it, and those who remain on deck after sunset often have cause to repent.

Lower Egypt has but one station which has genuine claims to consideration as a resort for invalids during the *entire season*, and that is Helouan. If for any reason it is necessary to pass the winter near Cairo, there is no other place where the temperature is so even and the air so dry.

It is literally surrounded by desert, and there is no vegetation near enough to produce any perceptible effect upon the atmosphere.

It rains there (usually a shower) about as frequently as in Cairo,— say once a fortnight during the season,— but it is entirely free from the mist which usually hangs over the capital until 10 A.M.

The mean average maximum temperature is 71.5° F. and the like minimum 50° F., with absolute extremes of 97° F. and 37° F.

These figures and all which follow in this paper apply to what is usually recognized as "the season" — Dec. 1 to April 1.

The drop in the temperature immediately after sunset is slighter and less abrupt than in Upper Egypt; but the thermometer during the daytime is 10° and during the night 5° lower than at Assouan.

The relative humidity is 55.5°, which is 14.5° greater than at Assouan, but rather less than that of Mena House or Ghezireh. There is a golf links, two good hotels and two or more comfortable *pensions*.

The facilities for walking and riding are excellent. The large and modern bathing establishment is well installed, but lacks an efficient heating apparatus.

An occasional *khamsin* (sand storm) constitutes an unpleasant feature in the spring, and flies and mosquitoes are persistent and more or less abundant.

Cairo is within easy reach by good trains, and while Helouan can hardly be compared with Assouan as a health resort, it is certainly the best in Lower Egypt, and a good place of residence for any one not quite strong who wishes to see something of Cairo between Nov. 20 and Christmas, by which time he ought to go further south.

Again, in the spring there prevails a certain amount of malaria of a mild type from which no place in Lower Egypt is entirely exempt, and to which an invalid should so far as possible avoid any chance of exposure.

Cairo the Fascinating, while not suitable as a residence for such as visit the country for reasons of health, is safe enough for invalids during the daytime, provided certain precautions are observed. The City of the Caliphs has no comprehensive system of drainage, and *in the native quarters* Oriental customs permit filth of every description to soak into the ground.

Mosques, bazaars, workshops and houses are as bad as possible from a sanitary point of view; and yet the abundant sunshine renders life possible under conditions which would rapidly kill off the population in a damp climate. In the European quarter one finds modern plumbing and carefully supervised cemented cesspools. A prudent resident of this section stands as good a chance of keeping well during the winter months as in other large cities.

The climate of Cairo is better than that of any place on the continent of Europe during the winter months, but is not ideal.

None of the hotels are provided with a really efficient heating plant, and open fireplaces in bedrooms are rare exceptions. There are many fairly cold (and a few rainy) days between Dec. 20 and March 1 (I am speaking of an average season), and the complaints of those who "thought that Cairo was always warm" are frequently heard.

There are certain special dangers to guard against — the bazaars should not be visited after a rain until the surface of the ground at least is thoroughly dry; no refreshments should be taken in any shop, and the night air must be avoided so far as possible.

Perhaps the safest and most comfortable place for one who does not care for Helouan, or to whom a desert climate is not a prime necessity, is Ghezireh Palace Hotel, which is well heated, surrounded by an extensive and beautiful garden, opposite a club for outdoor sports and within twenty minutes' drive of the center of the city.

Mena House, near the pyramids, may be considered a desert station after the annual inundation of the Nile (which floods the golf links and surrounding territory) has subsided; but the climate is not so good as that of Helouan, as the prevailing wind blows directly from the delta, which is composed of rich cultivated lands, numerous canals and other water surfaces.

The only other place worthy of consideration in

Lower Egypt is Ramleh, which is situated on the sea coast a short distance from Alexandria, where a person in delicate health may find comfortable quarters after April 1 and remain a fortnight or more before leaving the country, or in case of early arrival may stay until the good hotels of the other resorts are opened. The climate here is good at such times and *khamsin* winds infrequent.

Alexandria, Port Said and Ismailia are mentioned only as ports of entry and departure, and one's stay in any of them should be as brief as possible.

In Upper Egypt there are two stations only where comfortable hotels may be found — Luxor and Assouan.

The former may be reached by an excellent *train de luxe* in thirteen hours, or by "express boat" in four and a half days.

The air here is both warmer and dryer than that of any part of Lower Egypt, and the wonderfully preserved temples and tombs afford a boundless field for the enjoyment of such as are at all interested in Egyptology.

Before Assouan became well known, Luxor was the only health resort in Upper Egypt, and many invalids have recovered health or passed comfortable winters there.

It has not a *desert climate*, for its immediate surroundings consist of rich farming lands. The rainfall is slight (some seasons almost *nil*), and the relative humidity is 52.2° during the winter months and during the daytime 36.3° only. It is warmer here both by day and night than in any place in Lower Egypt; but the mean temperature range is large — 28.4°, with an abrupt decline at sunset.

Sand-storms are rare and flies and mosquitoes are fewer than they are in Lower Egypt, but more plentiful than at Assouan.

The facilities for walking and riding are good, and malaria is unknown. Luxor is a good halfway station for those who are en route either to or from Assonan, and a capital place for invalids who require the sort of mental exercise which Egyptology, even in a mild form, so readily induces.

Just below the First Cataract, and seven hours from Luxor by a narrrow-gauge road, over which roll phenomenally dirty cars, is Assouan, which is far away the warmest, dryest and cleanest place in all Egypt. Aside from actually camping in the desert there is no way of breathing so pure an air as by staying here, and the climate is nearly perfect, taking the season through.

The average mean maximum temperature is a fraction over 80° F. and the like minimum (6 A.M.) 54° F. The relative humidity between 10 A.M. and 6 P.M. averages 30.5° F., while that of the twenty-four hours is not quite 41°. There is an almost complete absence of cultivated land in the neighborhood of the best situated hotel (the Cataract), which is due to the fact that the banks at this point are so steep as to absolutely preclude any inundation of the Nile. A refreshing wind blows from the north and northwest and gives life to the air, and seldom blows too hard for comfort.

One notices here an agreeable absence of the howl for *backshish*, flies and mosquitoes. Walking, riding and boating facilities are excellent; good police and sanitary regulations are well enforced, and everything is done by the authorities for the comfort and safety of visitors.

In April, 1900, there was a shower which lasted nearly ten minutes; but since then there has been no rain so far as I have been able to ascertain.

During the past season (1902–3) there were three days when the sun was hidden and the wind so strong as to preclude riding in the desert; but with these exceptions there prevailed the perfection of fine weather, with a clear blue sky which stretched from horizon to horizon. Between Christmas and Feb. 1 one may expect some fairly cool days (in the shade) and a few really cold nights. Open fires, if not too large, are grateful in the evening at this time of the year.

The night air is harmless if one is well wrapped, and steel shavings fresh from the lathe show absolutely no signs of rust after weeks of free exposure.

The apprehension that closing the gates of the great dam above the cataract, and consequent holding back of an immense body of water during the winter months, might prove detrimental to the climate has proved groundless, and Assouan as a health resort remains without a rival in Egypt.

Malaria is unknown, and there has been no case of enteric among visitors during the past three seasons.

One is frequently asked as to what sort of clothing should be taken to Egypt, and the answer depends upon what part of the country is to be visited and during what months. For Lower Egypt between Christmas and March 10 one should dress as he would in New York or Boston in the late autumn or the month of April. In Upper Egypt the same rule obtains in January and the first two weeks of February, while before and after this period summer garments are worn.

Among the precautions to be observed (most of which apply to the well and weak alike) is not to move about the country too rapidly and try to see too much. Dr. F. M. Sandwith (of London and Cairo) tells me that he is constantly meeting with cases of nervous exhaustion, particularly among Americans, who have come to grief in this way.

It is just as well to avoid drinking Nile water everywhere excepting Assouan, where it can be safely used (filtered), coming down as it does through that sparsely populated waste of rock and sand known as the "Military Soudan," where it is free from the constant pollution to which it is subjected further down stream.

Milk from the ordinary sources of supply is not always safe unless boiled, and should pure milk be required for drinking purposes it must be obtained from a good dairy, of which there are several near Cairo and (on a far more modest scale) one at least at most of the other stations.

Moreover, this special milk is the product of

the cow, not the buffalo, which latter, while rich in cream and very nourishing, does not suit all palates.

Eating or drinking *anything* outside reputable hotels and restaurants is attended by a certain amount of risk, as any one familiar with native habits and customs can testify.

Egypt is a particularly easy place to "take cold" in, or as the English say, "for taking a chill." The contrast in temperature between sunshine and shade is great, and the delightful experience of lunching in the shadow of a picturesque ruin after a long excursion is likely to be followed by unpleasant results. Drafts, *even of warm air*, are to be avoided, and the least perceptible drop of temperature is a signal to the prudent for putting on overcoats or wraps.

In the matter of diet nearly all visitors fall into the error of eating too much and in too great variety. This often proves to be a grave mistake; and while they can scarcely be expected to adopt the *regime* of the natives,— whose diet consists principally of cakes made of an inferior flour of sorghum or maize, beans, dates, sesame (or linseed) oil, buffalo (or goat's) milk, and occasionally a little fish or the flesh of the goat,—avoidance of the richer sorts of food and restriction in the use of red meat and alcohol certainly tend to keep one well.

As I have previously said, the Nile is a cold river at times, and particularly so at night. Moreover on the lower part, say between Cairo and Assiut, mists are by no means uncommon, and every precaution against colds must be observed. Invalids ought never to sit on deck after sunset, and well people who do so should be warmly clad. Between Luxor and Assouan the river is far less chilly and one can easily arrange to make close connection with a steamer after reaching Luxor by train. So far as making the regular tourist's excursion up the Nile is concerned, the exposure and fatigue involved are enough to test the endurance of the most robust.

Any prolonged exposure to the sun's rays, particularly while riding or walking, is exhausting to one not acclimated; and the statement that a two hours' excursion in Egypt is fully equal to a half day's similar exertion in a temperate climate is quite true.

Many are inclined to laugh at those who wear solar topees and carry sun umbrellas; but I have seen one scoffer (who insisted upon making long excursions with no protection for his head save a black derby hat) fall insensible at the dinner table and require repeated hypodermic injections of brandy and strychnia before he could be revived.

For invalids and semi-invalids the Mecca is undoubtedly Assouan, unless some very potent reason exists for remaining within touch of Cairo, in which case they have the choice of Ghezireh Palace or Mena House after Jan. 1, or Helouan for the entire season in case a *desert* climate is indicated.

I have had a considerable personal experience of most of the stations, and am quite convinced that Assouan — where I have seen numerous cases of cardiac, renal and pulmonary troubles, rheumatism and nervous exhaustion, show radical improvement after a few weeks' sojourn — is by far the safest and best. It can be reached from Cairo in twenty-two hours by train, one week by "express" boat, or two days and a half by combination of both. The natives here enjoy better health than those in Lower Egypt, and during the late cholera epidemic not a case occurred in the town.

Further up the Nile is Wadi Halfa, but the climate there is neither so warm nor dry as Assouan, and as for Khartoum and Omdurman, one finds cold weather and blustering winds in winter, and, so far as I can ascertain, the chief pleasure of the journey is the opportunity to get rid of one's accumulations of dust and sand in the baths of Abu Hamed.

An invalid who wishes to obtain the best results from the climate of Egypt should arrive in Cairo not later than Dec. 1 (Nov. 20 would be better) and go directly to Assouan, to remain until the middle of March or even later, when he may safely go to Cairo by river if he so elects, and after a short stay at any one of the three stations (Ghezireh, Helouan or Mena House), make his way to Ramleh, where the hotels open April 1, to remain until the time arrives for leaving the country.

The common mistake made is that of choosing too early a sailing date. About the middle of April is the best time; for if one reaches the continent (or Sicily or Corfu) before the 20th, the weather will very likely be found too cold for comfort. Palermo and Taormina are both charming half-way stations, and Corfu (while a little damper) may be regarded in the same light. Of the three places Taormina is the best, for its elevation is sufficiently great to raise it above the mist which prevails in the spring along the entire coasts of Sicily and southern Italy.

THE TREATMENT OF DEGENERATIVE DISEASES OF THE NERVOUS SYSTEM BY MASSIVE DOSES OF STRYCHNIA, WITH SPECIAL REFERENCE TO TABES DORSALIS, PROGRESSIVE MUSCULAR ATROPHY, OPTIC NERVE ATROPHY AND PSEUDO-MUSCULAR HYPERTROPHY.[1]

BY GRAEME M. HAMMOND, LL.B., M.D., NEW YORK, N. Y.

I HAVE selected for my subject to-night the medicinal treatment of some of the degenerative diseases of the nervous system. I am aware it is an unusual subject and that the neurologists generally concentrate their energies in investigating and interpreting the remarkable changes that take place in the nervous system from disease, the relation of these changes to the symptoms evinced and the localization of the disease in the nervous system. The study of these subjects is of vital importance. They are not only of absorbing interest in themselves, but they lead up to the final goal, — the application

[1] Read before the Boston Society of Psychiatry and Neurology, April 16, 1903.

of the sum total of our knowledge to the intelligent treatment of disease. Each new discovery in regard to the structure, the development, the nutrition of the cell body, and every addition to our knowledge relating to the manner in which disease processes degenerate and destroy the cell bodies, must necessarily instruct us in regard to the best methods of preventing and arresting degenerations, which when they once begin so vitally affect the welfare of the individual.

Those of you who can look back a few years to the time when the lesion of tabes was considered to be an inflammation of the spinal cord can readily comprehend why all remedies brought to bear against it failed, and why because of our helplessness it was considered to be an absolutely incurable disease. Later, when the close relationship of syphilis to tabes was demonstrated, and it was seen that the most energetic antisyphilitic treatment failed to arrest the advances of the morbid process, the belief in the incurability of tabes became, if possible, more fully established. But with the acceptance of the neuron doctrine, the knowledge of the structure of the cell bodies,—incomplete as it probably is,—the manner in which the cells degenerate and the relation of toxins to this degeneration, the conception of tabes has materially changed. With a clearer understanding of the nature of this disease, and a more intimate knowledge of the process of degeneration, it does not seem either illogical or presumptuous to believe that some remedial agent will be found capable of overcoming toxic influences and arresting the consequent degeneration, or of arresting degenerations due to other causes at present imperfectly understood, such as that which occurs in the muscle elements in pseudo-muscular hypertrophy or in the optic nerve in simple retinitis pigmentosa.

I was led to consider the use of massive doses of strychnia in degenerative diseases by the beneficial effect produced in the treatment of certain cases of tic douloureux by comparatively large doses of that drug. In more than one case of this disease it has been clearly demonstrated that the symptoms depend upon a more or less profound degeneration of the cell bodies with their axons in the trigeminal nucleus, the ganglia and the nerve. In some cases the primary lesion seemed to be in the vascular system supplying the trigeminal mechanism, and the degeneration of the nervous elements seemed to be the direct result of the consequent deprivation of nutrition.

It seems probable, in the light of our present knowledge, that all degenerations result from one or more of the following causes: (1) Some toxin which, acting in a chemical manner, destroys the substance of the neuron, or by acting upon its metabolic mechanism prevents the assimilation of nutrition upon which its life depends; (2) some disease of the blood vessels causing their partial or complete obliteration or some other obstruction to the blood current which so deprives the neuron of its nourishment that its vitality must necessarily fail; and (3) some traumatism causing hemorrhages, lacerations or compressions.

The treatment of degenerations due to the latter cause has no place in this paper, as it does not seem probable that medicinal treatment can either eradicate the cause or arrest the disease under the circumstance. It occurred to me that possibly strychnia in doses far in excess of those generally administered, and continued for a long time, might favorably influence, in some instances at least, the degenerative process of tabes (from the other causes), and so improve the nutrition of the neurons that degeneration might either be arrested or at least delayed. There was little or no precedent for my guidance, except for the hint given me in the cases of tic douloureux already alluded to. I began a series of experiments, selecting a few cases from several diseases. My results I purpose to present to you this evening. The cases presented do not comprise all of the series. I have purposely refrained from including in my report all cases that have not been under observation for at least a year, with the exception of one case of retinitis pigmentosa and one case of progressive muscular atrophy. The former case has been under observation nine months and the latter case I report because the treatment had apparently no effect at all in arresting the progress of the disease. I have excluded all cases who have not been a year under treatment, because my experience has led me to believe that the prolonged administration of the remedy is essential before any definite conclusion can be reached in regard to the efficacy of the treatment and because I wished to exclude the possible hypothesis that any improvement obtained was only apparent and due to the influence of suggestion, which in some instances seems for a time to benefit patients who, when suffering from an incurable malady, undergo some new and unusual form of treatment.

The present paper is based on the results obtained in the treatment of eleven cases. There are four cases of tabes, three cases of optic nerve atrophy, three cases of progressive muscular atrophy and one case of pseudo-muscular hypertrophy.

TABES DORSALIS.

The first case of tabes in which large doses of strychnin were administered came to my clinic at the Post-Graduate Hospital in March, 1900. He was in an advanced stage of the disease, and could only walk with the assistance of a person on each side of him. The disease had progressed rapidly during the past year. The general symptoms of tabes were well marked. He had contracted syphilis about fifteen years before, and the symptoms of tabes had been in evidence for about six years. It was decided to give the strychnia hypodermatically in increasing doses. In order that this plan might be successfully carried out, Dr. Altman, one of my assistants, visited him daily, and personally gave him one injection each day. The dose at first was the 1-50 of a grain. This was gradually increased

until daily doses of 4-5 of a grain were reached. There never were at any time during which the treatment was continued any symptoms of strychnin toxemia.

The result of the treatment was not encouraging at first. The disease advanced apparently unchecked until he was totally unable to walk at all. At this time the dose had been increased to about 1-3 of a grain daily. From this time his locomotion improved until he was able to walk with very little assistance. None of the symptoms entirely disappeared, but it is equally true that he was benefited in many ways. The improvement consisted in a complete arrest in the advancement of the disease, a marked diminution in the severity and frequency of the attacks of pain and in a noticeable improvement in the power of locomotion. He became able to walk about the house alone by taking hold of different pieces of furniture, and could walk in the street with the assistance of a cane and one person to assist him. He has had no treatment for about year, but so far has not suffered any relapse.

The second case was sent to me by Dr. Troxell of Pittston, Pa., in March 14, 1900, — about two years ago. He was about forty years of age, and had contracted syphilis about eight years before. For the preceding two years he had suffered in a slight degree from the characteristic pains of tabes and from peculiar indescribable sensations in the legs, which would come on suddenly and always caused him to fall. A physical examination showed the Argyll-Robertson pupil. The knee jerks were absent. Romberg's symptom was present in a slight degree. He walked well and without any noticeable ataxia in gait, though he admitted he had to exert unusual care in walking over slippery surfaces. There was slight incontinence in urine. His general health was not good and his nutrition was much below par.

Here was a case in the early stage of tabes in which it was possible to begin treatment before the sensory neurons were in a state of advanced degeneration.

The initial dose of strychnia was 1-40 of a grain three times a day. The dose was gradually increased to 2-3 of a grain three times a day.

During the first three months of treatment there was little or no change in his condition, except that his general nutrition and health were greatly improved.

After the third month the pains ceased; the peculiar sensations in the legs and the consequent falls no longer troubled him, and he regained control over the bladder.

As the disease ceased to advance the dose of strychnia was never increased beyond 2-3 of a grain. After the first year it was reduced to 1-4 of a grain, and now he takes 1-8 of a grain.

At the present time, over two years after treatment began, it may be safely said the disease has ceased to advance. He still has the characteristic pupils and the loss of the knee jerks, but the other symptoms have entirely disappeared. In this case there was certainly very little improvement before the end of the first three months.

The third case began treatment March 25, 1901. She had contracted syphilis ten years before. The symptoms of tabes had been observed for about two years. She suffered severely from pains in the legs. The Argyll-Robertson symptom was present, the knee jerks were absent, Romberg's symptom was well marked. The gait was ataxic, so much so that it was decidedly noticeable. There were also numbness in both hands, with some loss of finger dexterity, and paralysis of the left levator palpebræ and internal rectus muscles. Her general health was not good. She was anemic and had lost a great deal of flesh, her weight then being one hundred and eleven pounds.

She was at first given strychnia in 1-40 gr. doses three times a day. The dose was gradually increased until a maximum dosage of 2-3 of a grain three times daily was reached. During the first two or three months of her treatment no amelioration in her condition was noticeable, except that her general health improved and her weight increased. After this some of her symptoms gradually improved — the numbness in her hands entirely disappeared; the severe pains diminished, until finally they seldom troubled her; she could stand better with the eyes closed, and her powers of locomotion increased quite remarkably. At the present time — over two years after treatment began — the third nerve is still paralyzed; the pupils remain unchanged; she has no knee jerks, and Romberg's symptom can be elicited, though it is less marked than it was. But her pains have almost entirely disappeared. She has gained twenty-nine pounds in weight. The numbness in the hands no longer troubles her; she can use her hands as well as ever in her business (dressmaker); and her walking has improved so much that her disability is only apparent to a close observer. A week ago I saw her walk a plank sixteen feet long, one foot wide, and elevated eight inches above the floor level.

CASE IV. This case was sent to me by Dr. A. C., Combes on April 28, 1902. He had contracted syphilis twenty years previously. He had been treated with the usual anti-syphilitic remedies for a number of months without benefit — in fact, the disease was rapidly advancing. He suffered severely from pain. The Argyll-Robbertson symptom was present; the knee jerks were absent; Romberg's symptom was well marked, and the gait was decidedly ataxic. There was numbness in both hands and both feet, the left side of the face, the left half of the penis and left half of the anus. Physically he was very weak. He weighed one hundred and twenty-nine pounds. The initial dose of strychnia was the 1-50 of a grain three times a day. The dose was gradually increased until at the end of three months he was taking 1-6 of a grain at a dose. During this time there was no noticeable improvement. On the contrary, the symptoms generally were more pronounced than when he began treatment. But shortly after he began to improve. At the present time, — about one year after beginning

treatment, — he weighs one hundred and forty-four pounds, a gain of fifteen pounds. The pains have entirely ceased, the numbness is seldom appreciated. He walks well and can even run and jump. There is no change in the pupillary symptoms, the knee jerks are still absent, and there is slight unsteadiness in standing with the eyes closed. He attends to business daily. The maximum dose reached was 2-3 of a grain three times daily. He now takes about 1-2 a grain at each dose.

In this case the degeneration was progressing rapidly and continued to do so for three months after treatment began. At the end of that time he was almost unable to walk at all, and could only do so with the aid of a cane for support. The improvement in locomotion is quite remarkable. He is, of course, not well, but the degenerative process seems to have been arrested.

In none of these cases of tabes was there ever any attempt made to teach them to perform purposive co-ordinated movements according to Fraenkel's method.

OPTIC NERVE ATROPHY (RETINITIS PIGMENTOSA).

The first case had been under the care of Dr. Greuning for the past seven years. Her sight from the very beginning of the disease had steadily failed and the visual field had contracted to about one-fifth of the normal range. When I first saw her she could not read type smaller than No. 13, the letters of which measure 1-8 of an inch in length. I first saw her on Nov. 30, 1901. For the past six months her sight had failed rapidly. She also suffered from frequent attacks of absolute blindness, which, however, lasted only a few minutes. Her treatment began with the administration of strychnia in doses of 1-50 gr. three times a day. The dose was gradually increased until the daily dose was 3-4 of a grain three times daily. Repeated tests made after the first month of treatment showed the disease was making no further advance. On the contrary, slight improvement in the visual power was observed after the first six months, and progressed up to the point where she could read test type No. 9, the letters of which are 1-16 of an inch in length. Her visual field has not expanded and there has been no further improvement in vision, but it may be positively said that the atrophic process ceased after treatment began, and has not shown any tendency to resume its course during the past seventeen months. She is still under treatment and is taking about 1-2 a grain three times a day.

The second case — a young woman twenty-four years of age — was sent by me to Dr. Roosa in March, 1902. She had been under his observation for several months, and he reported that both optic nerves were in an advanced state of degeneration. Her visual fields were greatly contracted. She could not read any of the type on the test card, though some of the letters were nearly an inch long. She could distinguish parts of the face of a person standing before her, but her field of vision was so contracted that she could not see the entire face. Large objects not too far off could be distinguished.

Her treatment was similar in every respect to that of the previous case, except that the maximum dose reached was 2-3 of a grain three times a day. A recent examination made by Dr. Roosa shows that the disease has not progressed since treatment began. She cannot see any better than she could, but her sight is no worse than it was.

The third case is that of a lady about forty-two years of age, who consulted me July 18, 1902. She had suffered from retinitis pigmentosa for several years. Her sight was very defective and the visual field was greatly contracted. Her father died of dementia, and a brother, nearly her own age, has become entirely blind as a result of optic nerve atrophy. The initial dose of strychnia administered was 1-50 of a grain three times a day. The maximum dose reached so far has been 1-2 of a grain three times a day. The degenerative process has ceased to progress. Her vision has not improved, but her sight is as good to-day as it was when treatment began.

PROGRESSIVE MUSCULAR ATROPHY.

The first case — a young man eighteen years old — came to my clinic Jan. 25, 1901. About a year previously he began to develop the Aran-Duchenne type of progressive muscular atrophy. When I first saw him the atrophic process had invaded the muscles of the hands, forearms, arms and scapular muscles. He could not raise either arm above his head. Fibrillation was plainly in evidence. Strychnia, beginning with a moderate dose, was given and gradually increased until 1-2 gr. doses three times daily were reached. Now, over two years after treatment began, it may positively be stated that the atrophic process has ceased. His muscular movements are stronger and wider in range. He can now elevate both arms above the head. The atrophy is still noticeable in the affected parts. I can only claim in this case that a rapidly advancing atrophic process rather suddenly ceased to advance and that slight improvement has taken place.

The second case — a man forty-two years old — presented himself at my clinic in October, 1901, suffering from progressive muscular atrophy. He was a miner and had been exposed to many hardships. He had also acquired syphilis about twelve years previously. His disease was of the Aran-Duchenne type, and had existed about two years. Atrophy was well marked in the hands, arms and shoulders.

He was treated with gradually increasing doses of strychnia, the maximum dose reaching a little over 2-3 of a grain three times a day. His treatment extended during a period of a little over a year under my supervision. After remaining a few months at my clinic and finding the disease showed no tendency to advance, he returned to his home in Butte, Mont., and continued his treatment under the care of his physician, who wrote to me from time to time.

I ceased to hear from him in a little over a year. At the expiration of that time there had been no advance in his disease. On the contrary, his strength had increased to a slight but appreciable degree.

The third case — a woman seventy years of age — came under my care Oct. 3, 1901. She had always enjoyed good general health until about one year previously she contracted a severe case of grippe. Three months after her recovery she first observed difficulty in articulation. This was followed by difficulty in swallowing. Subsequently weakness, accompanied by atrophy, appeared in both hands and forearms. Fibrillation was a prominent symptom. On account of the steady development of the symptoms, the strychnia was increased rather more rapidly than was customary, and soon half-grain doses were reached, three times daily. The disease, however, became more and more pronounced, and the patient died in about nine months.

I feel quite certain that the treatment did not even delay the progress of the degenerative process to any appreciable extent. Whether her age militated against her recovery or not is a matter of conjecture, but I am inclined to believe that it did.

PSEUDO-MUSCULAR HYPERTROPHY.

The patient, nine years old, consulted me in January, 1902. There was no history of any other similar case in the family. The patient walked as early as most children, but never walked strongly. When he was three years old his mother noticed he had frequent falls, and when he arose from the ground it was accomplished with difficulty and in the peculiar manner characteristic of the disease in question. The disease has advanced steadily, and now involves the legs, arms and back. Pseudo-hypertrophy was present only to a slight degree. During the past year he had lost flesh rapidly. His weight was forty-nine pounds in winter clothing. He could not go up stairs without assistance, and was unable to get upfrom the floor at all. The initial dose of strychnia was 1-100 of a grain three times a day. The dose was gradually increased until at the present time he takes 2-3 of a grain at a dose.

His general health is good. He has gained six pounds in weight. The measurements of his arms and legs all show a slight increase in muscular development. He walks better, and can even run, but often falls while doing so. He can ride a bicycle, and mounts and dismounts unaided. He can mount the stairs one foot after the other, by holding the rail with one hand.

A decided improvement in muscular development is perceptible, but the main point of interest is that the rapid degeneration of the muscular system has ceased. The increase in volume of muscle and bodily weight is not due to pseudo-hypertrophy, because with the increase in size of the limbs he is able to perform better muscular movements than before he began treatment.

It has never before been my good fortune to see these results in any other case, though one case is, of course, inadequate to base any positive deduction on.

My purpose in regard to the treatment was, in the first place, to administer the strychnia in such gradually increasing quantities that large doses could be reached without submitting the patient to the dangers of strychnia toxemia, and, in the second place, to continue the use of massive doses for months at a time. My practice has been to begin treatment with a very moderate dose, usually the 1-40 or 1-50 of a grain three times a day, and to increase the daily dose by about the 1-500 of a grain. Sometimes in the beginning I have increased the dose by the daily addition of 1-200 of a grain, but always diminish this dose to the 1-500 of a grain after doses of 1-8 grain were reached. In the first case and in a few others, I have given the medication hypodermically once a day. I cannot perceive that the method possesses any advantages over giving it by the mouth three times a day, and it is certainly not so convenient. In my first case a daily dose of 4-5 of a grain was reached, and yet the patient showed no evidence of toxemia. That is the largest dose I have ever given. The maximum dosage varied in other cases according to the severity of the disease — from 1-4 of a grain to 2-3 of a grain three times a day.

In analyzing these cases the criticism may with justice be advanced that there are too few of them to warrant any definite conclusions. That this would be so of diseases in general cannot be gainsaid, but with the class of diseases under consideration any improvement or arrest in the degenerative process is so rare that when it occurs even in a single instance it becomes a matter of importance. This is particularly true for such diseases as tabes, optic nerve atrophy and pseudo-muscular hypertrophy. Certain cases of tabes have perhaps been benefited by other means, but I know of no cases of retinitis pigmentosa and pseudo-muscular hypertrophy which have ever been arrested by any means whatever. In regard to the case of progressive muscular atrophy so much cannot be said. There are rare cases which advance to a certain point and then the degeneration seems to stop spontaneously. The case reported may be one of these, yet the patient has regained some muscular power, the parallel of which I cannot ascertain has ever occurred in those cases of spontaneous limitation.

It would seem, therefore, taking all these cases together, that the massive doses of strychnia employed for a long time had undoubtedly been instrumental in arresting degeneration. In conclusion I would point out that in not a single instance was any patient restored to a normal condition. Such a result was not anticipated. Neurons once destroyed cannot be recreated, and hence perfect recovery can never be achieved.

I have never seen any improvemet in the pupillary symptoms, the knee-jerks have never been restored, and Romberg's symptom, though

diminished, never disappeared completely. But it will be recalled that in several of the cases a certain amount of improvement followed the treatment. It may be argued from this that a certain degree of the symptoms depends upon partial degeneration of the cell bodies, and that if this degeneration has not passed beyond a certain point, the partial or complete restoration of the cell amounts to more than a possibility.

It certainly seems possible, in some instances at least, to arrest degenerative processes in diseases which have hitherto been regarded as hopeless. If this is so, the importance of early treatment cannot be too strongly insisted upon. I confess I do not yet know whether the cessation of the degeneration will be permanent or not. It may be that the treatment has only checked the morbid process and that in two or three years' time, or even less, the degeneration may resume its progress. Time only can elucidate this point. I do not yet know how long treatment should be continued in order to permanently arrest the degeneration, if such a result can be accomplished. Further investigation is necessary before this question can be determined.

A BRIEF SUMMARY OF THE SURGERY OF THE ESOPHAGUS.[1]

BY SAMUEL J. MIXTER, M.D., BOSTON.

THROUGHOUT a considerable part of its course, the esophagus is more difficult of access than any other part of the alimentary canal, and hence the surgical procedures resorted to in other situations for the relief and cure of malignant and other growths are not available here. In the neck, however, its upper part is easily reached, and through the stomach something may be done to its lower part.

The chief causes calling for surgical interference are:

(1) Congenital malformations, such as double esophagus or pouches.
(2) Impacted foreign bodies.
(3) Malignant disease.
(4) Syphilis.
(5) Cicatricial stricture.

In the above list is not included spasm of the esophagus, really a medical rather than a surgical condition, although it is almost always cured by mechanical means, the passage of a full-sized probang. It should be mentioned, however, that Mickulicz, in a paper read before the American Surgical Association at its recent meeting in Washington, describes an exaggerated form which he calls "Cardiospasm," causing a very considerable fusiform dilatation of the lower part of the esophagus, for which he has performed gastrotomy, and through the opening forcibly dilated the cardiac orifice. He also suggests that this might be done by means of a suitable dilator, introduced from above.

[1]Read before The Massachusetts Medical Society, June 9, 1903.

(1) Congenital malformations are perhaps the most interesting and puzzling conditions met with. They may exist for years, and only suddenly be called to the attention of the patient by an inability to swallow, caused by some irritation produced by a rough ingested body, or they may be the cause of difficulty for years, and simply give the patient great discomfort and annoyance without endangering his life.

The case of a boy of ten years of age in my service at the Massachusetts General Hospital well illustrates an exaggerated form of this condition. He was brought in in the last stages of starvation, having had difficulty in swallowing for some years, the trouble being thought due to a small metal disk that he had swallowed when about four years old. He died soon after a gastrostomy had been performed under cocaine anesthesia, and on autopsy it was found that there were two tubes, one reaching from the pharynx nearly to the stomach, the other from the stomach nearly to the pharynx, with only a very small opening between them about three inches from the stomach.

Such a case might, I am sure, have been relieved, if not cured, in the manner to be spoken of later in connection with cicatricial contraction.

Congenital pouches are much more common, I have found, than is generally supposed. I have seen a considerable number of them, having seen three of them in my office in a month. They are usually small at first, and it is often late in life when they cause serious inconvenience. In these cases there is usually a history of a "small throat" since childhood, and finally regurgitation of food. These pouches are found in all parts of the esophagus, but fortunately are most often situated in the neck or behind the clavicles.

When the pouch becomes dilated it is almost impossible for the patient to swallow enough food of any kind to keep himself alive, though there is really no true stricture of the canal, the whole trouble being caused by the "spur" that acts as a valve.

When the pouch can be reached it may be excised and the esophagus sutured, the result being a perfect restoration of function. This is the ideal method of treatment, and should always be advised if the patient's age is suitable.

Much to my surprise, I have found that in many cases, when, for one reason or another, it was not thought best to resort to what must always be a difficult and fairly dangerous operation, I could by the passage of suitable bougies relieve the difficulty to a considerable degree, and the pouch would contract to a remarkable extent, so that the most distressing symptoms would disappear. The patient is given a large bougie which he learns to pass himself, and, though not cured, is made comfortable. This method of palliative treatment is worthy of trial in certain cases.

The passage of a bougie past such a pouch is not the easiest thing in the world, even to the

practised hand, as the opening of the esophagus is always on one side, and though large enough to admit an instrument of the largest size, may not be found by the tip of the bougie until after repeated trials.

And just here let me speak of esophageal bougies and their passage. Unfortunately in this country I have been unable to find a good quality or suitable sizes. The most perfect ones that I have seen come from Paris, are woven like urethral bougies, with olive tip, beautifully polished, and some of them are loaded with fine shot. The largest sizes should be at least three-fourths of an inch in diameter.

As has been said before, the lower opening is almost always on one side of the canal, and this is true not only of the congenital pouch but also of the acquired pouch that usually forms above malignant and cicatricial strictures. Hence, in order to find this opening it is well to have a bougie bent at a slight angle or even of a bayonet shape, so that the point will hug the side of the canal. This may be best done by a whalebone stylet, bent at the proper angle by heat, and forced down into the hollow bougie. It should always be remembered that even with these flexible instruments fatal injury may be inflicted, not only by passing them through a malignant growth into the mediastinum or elsewhere, or through the bottom of a congenital or acquired pouch, but also through the normal wall of the pharynx or esophagus. I have had one such accident. perforating the wall just at the beginning of the esophagus, when every attempt to swallow forced air and the contents of the pharynx into the cellular tissue, causing emphysema, inflammation and death.

The bulb probang is a useful instrument for exploration and diagnosis, but is not to be recommended for dilatation.

(2) Of impacted foreign bodies so much has been written that one need only speak of the great advantages of esophagotomy or gastrotomy in their removal, over prolonged or violent attempts with forceps, coin catchers and similar instruments.

In the hands of the expert laryngologist, the removal of foreign bodies from the esophagus by means of suitably constructed esophageal tubes or specula and forceps is often most successful, and should always be tried if the right man and instruments are at hand.

(3) Malignant disease of the esophagus is the most frequent cause for seeking surgical aid, and the one most hopeless of cure, though much may be done to avert starvation and to relieve the patient. It may occur in any part of the canal, and is seldom of such character that excision is of benefit. Sometimes, however, when the growth is very high up, it may be possible to remove it and bring the lower end of the esophagus into the lower angle of the wound. As a rule we must be satisfied with relieving the dysphagia.

Dilating the stricture is the most common method of treatment and is the most satisfactory in many cases, especially if food is introduced into the stomach at the same time. In many cases there is hemorrhage or irritation caused by every introduction of the bougie, and it is in these cases that Symond's method of permanent tubage is of great help. The tube is introduced over a small bougie as a guide and is left in for a week or two, the patient swallowing liquids easily until the tube becomes foul and stopped. Remember that a pouch almost always forms above a malignant stricture and hence the passage of a straight instrument may not be possible. For impassable or very irritable strictures of this sort, esophagostomy or gastrostomy is demanded. I have had most satisfactory results with esophagostomy in disease high up, and much prefer it to gastrostomy when it is possible.

(4) Of syphilitic strictures there is little to be said except that they are far from common, and should be treated with appropriate medication and dilatation.

(5) Cicatricial strictures of the esophagus, generally the result of swallowing strong acids or more generally alkalies, are among the most common and obstinate lesions of this canal that the surgeon is called upon to treat. Generally multiple and difficult to dilate, often with several acquired pouches, the resources of the surgeon are taxed to the utmost. Constant dilatation will serve to keep the canal patent, but often the canal is tortuous and even impassable to the smallest bougie. Sometimes an instrument may be passed *upward* from the stomach through a gastrotomy opening, but it is by no means easy.

It is in these cases that he method of Abbe — sawing through the stricture with astring — is of the greatest benefit.

Two years ago, before this society, Dunham of New York read a paper on this subject and demonstrated his beautiful method of getting a guide through a seemingly impassable stricture. His recent paper in the *Annals of Surgery* gives the whole story, so it need not be repeated here; enough to say that any one who has ever tried this method, as I have in a number of cases, cannot fail to be impressed with its ingenuity, simplicity and splendid efficiency. It is the greatest improvement in the technique of esophageal surgery in recent years. By this method of thread swallowing I have been able to relieve most desperate and apparently hopeless cases of multiple stricture both in children and adults, and keep them from living the rest of their lives dependent on a tube and tunnel in connection with a gastrostomy opening.

In conclusion let me strongly insist upon care and delicacy of manipulation in all esophageal work. Do not even examine too long at the first sitting if the instrument does not pass readily. Too prolonged probing may send the patient home with a stricture that is tightly closed by swelling, and the result may be serious. The esophagus is more intolerant of violence than even the urethra.

DISCUSSION.

DR. G. W. GAY of Boston: It has fallen to my lot to do esophagotomy four times: once upon a child three and one-half years of age, for the removal of a cent; once for a plate carrying four teeth; once for a fish-hook, and once for a malignant stricture of the esophagus to enable a Symond's tube to be placed in position. Another case of foreign body should have been treated by operation, but owing to one of those psychical lapses to which, I presume, most of us are occasionally liable, the diagnosis was not made until the autopsy revealed a small sliver which had ulcerated through the walls of the esophagus, and produced an abscess in the mediastinum. The first operation was done in 1878. No more cases came to my notice for thirteen years, when three operations were done within five months.

My first case of esophagotomy was done on Sunday, Sept. 8, 1878. The patient, a cook, forty-nine years of age, while eating fish, felt something lodge in the throat, which prevented her from swallowing solids. She entered the City Hospital twenty-six hours after the accident, presenting the usual symptoms of these cases. She was unable to swallow solid food, and could swallow liquids only in a very small quantity, and after repeated and painful efforts. She was weak, depressed and evidently the victim of a profound general disturbance.

The careful use of the bristle and sponge probangs failed to dislodge the foreign body. The pulse and temperature began to rise, and the constitutional disturbance, in the way of restlessness, depression and debility, increased. Forty-eight hours after the accident the esophagus was exposed upon the left side, as described by Dr. Cheever in his classical monograph. A sharp substance was felt at the bottom of the wound, which after a little manipulation was seized with forceps and made to cut its own way through the walls of the gullet, purulent matter escaping with it. The cause of the trouble proved to be a thin, flat fish bone an inch and a quarter in length and a third of an inch wide. It was imbedded in the posterior wall of the esophagus opposite the cricoid cartilage. No ligatures were required. The small wound in the esophagus was allowed to take care of itself. The external one was closed with sutures.

For four days after the operation no food or drinks were swallowed, but she received rectal injections of beef tea, etc., every four hours. The wound suppurated moderately, but no food or drink ever escaped from it. It was healed in ten days, and the patient left the hospital eighteen days after operation. She was able to eat solid food, and was apparently as well as ever.

This was a fortunate case in that the operation was done earlier than usual, — forty-eight hours after the accident, — the foreign body was located favorably for removal and comparatively little violence to the deeper structures was necessary.

Lena, three and a half years old, was brought to the City Hospital on Friday, October 16, 1891, with a history of having swallowed a foreign substance eight months before. She was said to have had little, if any, trouble for six months; but for the past two months she had ejected most of her food in about a minute after it was swallowed. She was weak, languid, emaciated and presented all the appearance of a sick child.

She was examined under chloroform with an ivory-tipped probang, and a metallic body readily detected in the lower part of the esophagus. The gullet was opened in the usual manner, the walls being divided upon a uterine sound as a guide. The foreign body was located about two inches below the top of the sternum and four inches from the opening in the esophagus. It was readily removed with a pair of bullet forceps, and proved to be an ordinary copper cent.

The wound was left open, and the child was nourished for some days on enemata of peptonized milk. From the first she was allowed to drink all the cold water she wanted, as the thirst was irresistible. Liquids escaped from the wound in diminishing quantities for ten days. The child was up and around the ward in thirteen days, and was discharged two days later. Twenty-five days after operation she was eating solids, had regained her flesh and strength, and was well.

A teamster, a young man of intemperate habits, fell from his cart and knocked a plate with four false teeth down his throat. He entered the hospital four days later in a wretched condition. He could swallow only liquids, and these in very small quantity, and with great difficulty. He was septic, weak, despondent and miserable.

With an ivory-tipped probang the plate was easily detected in the esophagus, thirteen inches from the upper incisors and about four inches below the top of the sternum. There was moderate swelling above the clavicles and sternum.

Esophagotomy was done at once, the walls of the tube being divided upon a pair of esophageal forceps used as a guide. The plate was located about seven inches from the wound, and after careful manipulation was finally removed with forceps. Its measurements were one and three-quarters by one and a half inches, with the usual sharp corners and prominent borders.

The wound was closed, and the patient fed and stimulated by the rectum and through a stomach tube. In spite of vigorous measures along these lines, he died of sepsis five days after the operation.

Mr. K., aged forty-eight years, entered the City Hospital suffering from a malignant stricture of the esophagus, which prevented his swallowing anything whatever. The dysphagia had been growing markedly worse for about four months. As might be expected, he was weak and emaciated, and suffering all the horrors of slow starvation. All instruments passed into the gullet brought up in a pouch behind the sternum. To enable a bougie to be passed through the stricture into the stomach, the esoph-

agus was opened in the usual place and manner, and with a finger in the wound a hard mass, the size of a hen's egg, was readily felt, involving the gullet. Above this mass the esophagus was dilated into a sac. On the anterior wall about an inch from the bottom was found the opening of the lower portion of the gullet leading to the stomach. A long bougie was passed through the mouth and, guided by the finger in the wound, was made to enter the lower part of the tube. This done, Dr. Mixter had no difficulty in placing the No. 19 Symond's tube in position, so that it passed through the stricture into the stomach.

The patient rallied well from the chloroform, and was able to drink liquids fairly well. While considerable quantities escaped from the wound, yet he retained enough to remove his hunger and thirst, and to enable him to gain quite a little strength, sufficient to make him much more comfortable than he was before the operation. The tube was replaced by another in two weeks, and again nine days later. As this last one could not be removed by any reasonable force, it was allowed to remain during the remainder of his life.

This patient improved sufficiently to enable him to go home a month after the operation, where he remained until two days before his death. He entered the hospital for the last time, emaciated to the last degree, and suffering horribly from dyspnea. A quick tracheotomy was done under a few whiffs of chloroform with some little relief, but he soon succumbed to the disease and died in forty-eight hours.

Could this patient's esophagus have been intubed earlier, it is but fair to conclude, from the relief he did get, and from the experience of Dr. Mixter and others, that he might have lived some time longer, and that he certainly would have suffered less than he did. In the earlier stages of the disease, before the esophagus had become dilated above the growth, the Symond's tube could probably have been inserted without any operation. This disease is always fatal so far as we know, and yet almost any measures are justifiable to give even temporary relief to the horrible suffering of slow starvation.

The diagnosis of foreign bodies in the esophagus is not difficult for those who have ever seen a case of this sort. Many physicians, however, have never met with the accident, and therefore might find it anything but easy to distinguish the real from the suspected cases. The latter are more common than the former, and usually occur in nervous or neurotic persons, as servant girls, etc. They complain of pain and difficulty in swallowing, and yet they can readily swallow liquids, or even solids, without any great effort. They are apt to be indefinite as to the exact location of the sore spot, it being situated in different places at different times, or more commonly the distress is a general soreness, rather than a distinct, localized, painful spot. There is no constitutional disturbance whatever, no increase in pulse or temperature, and no depression of the vital energies. They are nervous and frightened, but not sick.

Now, the clinical picture of a person with a foreign body lodged in the esophagus is very different from all this, and once seen can never be forgotten. Depressed, anxious, debilitated from the lack of nourishment, dreading to make the effort of swallowing, and accomplishing that function only with great difficulty and after repeated trials, locating the tender or painful point definitely, and always in the same place, — these symptoms point very strongly to the pressure of a foreign body in the gullet. The diagnosis is complete if it can be confirmed by an examination with an ivory-tipped bougie or similar instrument. Unfortunately many foreign substances elude the peculiar impact of the bougie, and thus little or no aid is to be obtained in that manner. The above symptoms, however, if severe and progressive, justify an exploratory operation.

The x-ray furnishes unmistakable evidence of the presence of certain substances in this part of the body, as well as in every other. False teeth, pins, needles and other metals are readily shown by these rays, and thus give us the benefit of a positive diagnosis.

Little dependence can be placed upon bristle and other probangs for the removal of foreign bodies from the gullet. They sometimes succeed but oftener fail in accomplishing the object. I once removed a large piece of turkey bone and meat with the bristle probang, twenty-four hours after its introduction. In a case of a child three and a half years old, a careful examination under chloroform failed to reveal any foreign body, although the symptoms pointed strongly to its presence. Operation was refused. Eight months after the supposed accident the boy vomited a pewter quarter of a dollar. All symptoms, including a persistent hoarseness, soon after disappeared, and the boy was perfectly well.

In regard to the method of doing esophagotomy the only point that I would call especial attention to is the use of some metallic guide in the esophagus. The great advantage of this sort of an instrument over a flexible one is that it can be more readily introduced, can be manipulated and controlled at will, and hence made prominent at place of incision of the esophageal walls. We have found the ordinary uterine sound to answer the purpose very well, especially in children, but anything having the necessary curves and stiffness will do.

In a thin neck, free from edema or swelling, the operation for opening the esophagus is not a difficult one, but under opposite conditions it may be very difficult. Hemorrhage usually gives little or no trouble, and often no ligatures are required. As a rule the writer has used chloroform in operations upon the esophagus, as well as in those involving the trachea, for the purpose of avoiding the spasm of the glottis and free accretion of mucus, which at times threatens to drown the patient. Less danger is to be apprehended from these complications in opera-

tions upon the esophagus than upon the trachea, in which they are common and call for close watching and prompt relief to avoid disastrous results. The risks in the use of chloroform under these circumstances are probably less than are to be expected from the various complications that may arise under ether. The writer has never met with any trouble or untoward symptoms from the use of chloroform in operations about the face and neck, while he is fully aware of the moderate danger of its use in general surgical operations.

INFERENCES TO BE DRAWN FROM THE EXAMINATION OF THE GASTRIC CONTENTS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

THE gastric contents are examined chiefly to aid in the diagnosis and treatment of catarrh, dilatation, ulcer, cancer and neuroses of the stomach or to obtain proof that it is in a healthy state. The list is a small one. In reality the diagnosis of the various diseases of the stomach is far easier than is usually thought. The rule of exclusion can be used to great advantage.

The data upon which diagnoses are based are also few, some six in number. Five of these can usually be detected by gross observation, while the chemical tests for the remaining are extremely simple. The subjects which admit of discussion to-day are: (1) Gastric motility. (2) Gastric secretion. (3) Gastric fermentation. (4) Mucus. (5) Blood. (6) Pus.

Another function of the stomach — absorption — is not included in this list. Absorption may be disregarded, because so little takes place through the walls of the stomach. Practically no water is absorbed. When water enters the stomach, it is either expelled through the pylorus, the cardiac orifice or remains. There are one or two exceptions to this rule of the non-absorption of food in the stomach. Sugar and peptones are absorbed to a slight extent, varying with the concentration of the solution. Alcohol is readily absorbed, as is manifested by clinical experience. When alcohol is absorbed from the stomach, water is secreted into it in more than equivalent volume. Since absorption is of such minor importance, the iodide test for it is superfluous.

(1) *Gastric motility.* — The power to expel its contents is the most important function of the stomach. If secretion utterly fails, there occurs only a moderate impairment of digestion. This is due to the compensatory action of other digestive organs. Let gastric motility fail, however, and distressing, urgent or fatal consequences invariably ensue.

Gastric motility is disturbed by various means. Perhaps the commonest is that due to weakness of the gastric muscles themselves. This may form part of a general muscular weakness, and is often associated with a displacement of the stomach and frequently of other organs. Such a displacement increases the work to be done by the stomach because the pylorus is more firmly fixed than the rest of the organ and the food must be raised before it is expelled. A vicious circle is the result.

Another cause less generally appreciated is interference with the continuity of the inner wall of the stomach. Such a state is brought about by an ulcer or cancer, even when they do not obstruct the pylorus. The interference with motility in such cases is not extreme, but it is quite constant. The detection of slight degrees of disturbed motility is therefore important and a suspicious sign.

Obstruction to the passage of food through the pylorus is the most obvious cause of disturbed muscular action in the stomach. At first the obstruction usually leads to extra efforts on the part of the muscle walls. This is apparent to the patient by the sensations produced and to the physician by his observance of peristalsis. In the advanced stages of this condition exhaustion of the muscles apparently succeeds to active peristalsis and the most extreme grades of dilatation of the stomach result. It is often impossible to determine the cause of a pyloric obstruction at a first visit and it is unwise to attempt a diagnosis. Repeated observation of the behavior of the stomach under varying conditions is essential. In many instances time alone will determine whether the stricture is functional, being due to spasm, or is organic from the presence of a scar, ulcer, cancer or other less common causes.

The determination of gastric motility is the most important test in the diagnosis and treatment of disorders of the stomach. Frequently proof of its derangement is afforded by the story of the patient. Food is vomited which has been eaten more than seven hours previously, or quantities of food are vomited which are so large that they are directly suggestive of a dilatation of the stomach. This is acute or chronic according to the frequency with which such vomiting has occurred. A degree of muscular disturbance sufficient to produce such symptoms is rare, but even when it occurs it is not uncommonly overlooked. It must not bias the practitioner, however, in favor of malignant disease any more than marked loss of weight in an individual with indigestion.

In contrast with this crude method of estimating gastric motility is the accurate test of this function by the passage of the stomach tube into the fasting stomach. The fasting stomach should be empty. If food is obtained from it seven hours after a meal it can be assumed that there is disturbance of gastric motility. This examination is the simplest and most valuable of all examinations of the stomach which are made. In the first instance, the manipulation of the tube is easier with the fasting stomach than after a test meal. In the next place, the contents so removed are more readily examined. Inspection alone will determine the presence of food, secretion, fermentation, mucus, blood and pus —

[1] Read before The Massachusetts Medical Society, June 9, 1903.

the essentials for gastric diagnosis. Too much cannot be said of the value of the examination of the fasting stomach.

Conclusions regarding gastric motility may be reached by measuring the quantity of food removed from the stomach one hour after the administration of an Ewald test breakfast. The slice and a half of bread and the glass and a half of water of which this consists should leave a residue of not more than 3 oz. when removed under the above conditions. Excess of this quantity suggests a deranged muscular activity. Another method of reaching the same result is to give Hemmeter's test meal. This consists of one small piece of beef (2¾ oz.), one soft boiled egg, 1 oz. boiled rice, one-half pint milk and a piece of bread. Four to five hours later an Ewald test breakfast is given and the contents removed in one hour. The complete disappearance of the earlier meal points to normal motility. Gastric motility has been tested in still another way by directing the patient to eat at night a few spoonfuls of dried English currants. These would not be found on the following morning in a healthy stomach.

Normal motility is present in two diseases of the stomach — gastric catarrh and in the group of cases included under the term "achylia gastrica." In the latter instance excessive motility has been supposed to be present. This idea may have arisen from the fact that undigested fragments of food are expelled with difficulty through the stomach tube. The stomach is then considered empty when this is really not the case. The water has passed on, but the solid particles of undigested food remain and can be obtained by prolonged expression, aspiration or lavage.

(2) *Gastric secretion.* — The healthy stomach produces about three pints of gastric juice in twenty-four hours. Ordinarily this passes on with the food into the intestine without causing disturbance. It is obvious, however, from what has been said of the slight degree of absorption which takes place in the stomach and the various conditions in which the muscular power of the gastric wall is affected, that such quantities of secretion can cause many symptoms. Much confusion exists between slight degrees of deficient motility and excessive production of gastric juice. But the pronounced states of either are clear. When the secretory function is in a normal condition the fasting stomach will be empty; if hypersecretion is present, varying quantities of gastric juice up to several ounces can be removed from the fasting organ. Increased secretion of gastric juice is pathognomonic of no single disease. It most frequently occurs as a neurosis in connection with an overproduction of hydrochloric acid. It is a precursor of ulcer of the stomach and is the signal for prophylactic treatment. It accompanies ulcer.

The constituents of gastric secretion which are most important for recognition are hydrochloric acid and pepsin. Their presence in normal quantities may be inferred with great probability from the gross appearance of an Ewald test breakfast. Such contents removed from a normal stomach look "well digested." If gastric secretion is absent the contents resemble closely a mixture of bread and water. It is not safe, however, to rely wholly on gross appearances, for occasionally with excessive amounts of hydrochloric acid a somewhat similiar condition is produced.

The safest test for hydrochloric acid is with Günzburg's reagent.[2] This is performed by slowly heating a few drops of this solution with an equal amount of the stomach contents. A red color develops. Another test is with Congo red paper.[3] This turns blue when moistened with a solution containing free hydrochloric acid. The development of a brownish color with Congo red denotes the presence of some organic acid. Congo red paper is very useful in a general practice because it requires no apparatus. Following a suggestion of Dr. Pfaff, it can be prepared in different strengths, and with these an approximate idea of the percent of free hydrochloric acid in the stomach can be obtained.

Excess of hydrochloric acid occurs most commonly as a neurosis. It is the torment of the nervous dyspeptic and the nervously tired-out individual. Like hypersecretion it frequently precedes ulcer of the stomach and generally accompanies the condition when established. Often hyperchlorhydria occurs in dilatation of the stomach due to a benignant stenosis of the pylorus. In such cases the stagnant food appears to call it forth. Ulcer is usually associated with the presence of free hydrochloric acid, often in excessive amounts. In cancer, free hydrochloric acid is the exception. It is by no means seldom, however, that a chronic ulcer exists without free hydrochloric acid and that a cancer is accompanied by free hydrochloric acid. In the latter instance the cancer has usually developed from an old ulcer — a much rarer condition than supposed.

The hydrochloric acid is diminished in catarrh of the stomach to a greater or less extent according to the severity of the disease. It is completely absent in atrophy of the mucous membrane and sometimes absent when no atrophy exists, perhaps due to a secretory neurosis. Patients in whose gastric contents no hydrochloric acid can be found after repeated trials are said to have achylia gastrica. (Strictly speaking, the absence or marked diminution of pepsin and renin also should be proven to establish this condition.) The acidity of such contents hardly suffices to react red with litmus. The gross appearance of an Ewald test breakfast removed from a patient with achylia gastrica

[2] Günzburg's Phloroglucin-Vanillin Test.

Phloroglucin	2
Vanillin	1
Alcohol	30

[3] Filter paper saturated with aqueous solutions of Congo red of the following strengths will react with the given percents of free hydrochloric acid:

Congo Red.	*Hydrochloric Acid.*
Percent.	*Percent.*
0.001	0.200
0.00175	0.150
0.0025	0.075
0.0062	0.050
0.01	0.025
0.05	0.01

resembles a mixture of bread and water, so incomplete is its digestion. It is a rule for the hydrochloric acid to be absent in cancer.

Pepsin varies in the gastric juice to a greater or less extent with the hydrochloric acid. In most examinations of the stomach contents the tests for it can be omitted. It can be demonstrated as follows: Add a portion of the white of a hard-boiled egg of about the size of a dime to 2 dr. of filtered gastric juice. Keep at body temperature. The egg normally is digested or disintegrated in two to six hours. If free hydrochloric acid is not present, add dilute hydrochloric acid one drop at a time until its appearance is shown by Günzburg's or the Congo red test.

(3) *Gastric fermentation.* — Fermentation in the stomach is proof of diminished motility. It is recognized by the appearance of three layers in the gastric contents, which form about a quarter of an hour after their removal. This is best shown by placing the contents in a glass. The lower layer consists of partially digested food, the middle layer is liquid and contains the soluble products of digestion, while the upper is frothy, due to the admixture of gas (chiefly carbonic acid) with small particles of food. The exciting agent of the fermentation varies, and, as Dr. Hewes has shown to the students of the Harvard Medical School this year, can be isolated. Especial interest attaches at present to but two sorts of fermentation — that caused by sarcinæ and that due to the lactic acid bacillus. Sarcinæ grow abundantly in the presence of hydrochloric acid, and lactic acid bacilli only in its absence. The presence of sarcinæ therefore implies fermentation in a stomach which is still secreting hydrochloric acid, while lactic acid implies that no hydrochloric acid is being produced. In both, motor insufficiency is present. Sarcinous fermentation has a peculiar odor which is so distinctive that when once appreciated it is easily recognized. The sense of smell alone can in this way lead to a conclusion that hydrochloric acid is present. Conclusive proof is afforded by the detection of the "cotton-bale" shaped sarcinæ under the microscope. Lactic acid is demonstrated by the distinct appearance of a canary yellow color on the addition of filtered gastric contents to a nearly colorless solution of ferric chloride. The demonstration of sarcinæ or lactic acid in a stomach contents adds therefore nothing new to our knowledge. It is simply another method of showing that a state of deficient motility, associated with or without hydrochloric acid, exists.

(4) *Mucus.* — Mucus is present in the stomach when there is catarrh of that organ. Acute or chronic gastric catarrh exists only when associated with mucus. The acute cases attract little attention, for the duration of the disease is so short that an examination of the stomach is seldom necessary. Chronic catarrh of the stomach is a rare disease, notwithstanding it is so common in the minds of the laity, and for that matter in the diagnoses of the profession. In a recent four months' out-patient female medical service in which about one thousand new patients were seen, only one typical case of chronic gastric catarrh was recognized. In fact, one of the decided advantages of the examination of stomach contents is the opportunity it affords of disabusing the patient's mind of the idea that he or she has a chronic catarrh. On the other hand it must be remembered that catarrh may exist with cancer or dilatation of the stomach. The mucus obtained from the mouth, throat and esophagus during the passage of the stomach tube should always be distinguished from mucus formed in the stomach. Gastric mucus is intimately mixed with the food; other mucus is not. Mucus is most easily detected in the fasting stomach.

(5) *Blood.* — Blood is not uncommonly obtained from the fasting stomach. Cancer is the disease most uniformly associated with it, for either a little blood is present in the stomach before the introduction of the tube or is set free by the irritation of the tube itself. Ulcer behaves similarly. Very small quantities or little clots of blood are frequently obtained from patients with achylia gastrica. These three diseases can often be differentiated by the state of gastric motility and the hydrochloric acid. Blood may also be obtained from the healthy stomach by too forcible straining and struggling on the patient's part or too powerful aspiration of the contents by the doctor. Coffee-ground vomitus perhaps is more commonly associated with cancer than with ulcer, but it is by no means proof of it. It may occur daily for a week in ulcer.

(6) *Pus.* — Pus is common in any gastric catarrh. It is frequently met with in the fasting stomach of patients with cancer or ulcer, and so in the absence of mucus gives valuable evidence.

Diseases of the stomach can be treated empirically or with a certain degree of scientific accuracy. The scientific method is usually successful, while empiricism favors a migratory tendency on the part of the patient. If, on the other hand, empiricism is successful and the patient is cured, in the end more real harm results, for the doctor is encouraged to repeat his lucky experiment and his medical progress thereby comes to an end.

The examination of gastric contents is often neglected because it is thought to be too difficult and too time-consuming. These views are erroneous. The examination requires no more time than the examination of the urine, and is far simpler. In fact, the gross examination of the gastric contents furnishes the most valuable data of all, and these can be recognized almost at a glance. There is no necessity for the busy practitioner to titrate the percent of hydrochloric acid in the gastric contents. It is far more important that he should determine whether the organ contains food and secretion in the fasting condition and that he should make the simple tests necessary for their examination. More important still is the need for a proper interpretation of the results so obtained.

Rules are no more hard and fast in this branch

of medicine than in any other, and satisfactory deductions can only be drawn when the history of the patient, the physical signs and the data relative to the contents of the stomach are considered together.

DISCUSSION.

DR. R. F. CHASE of Brookline: Dr. Joslin has very thoroughly and concisely discussed a very broad subject. He has left very little to be said upon this subject. There are, however, a few points to which I wish to refer with the object mainly of emphasizing their importance:

When a patient comes to the physician for an examination of the stomach, he should not have eaten anything for at least six hours.

With a fasting stomach the physician can at once proceed to give a test meal and later examine the gastric contents obtained therefrom. Or, should it seem preferable, he can obtain the fasting contents (if there are any), then inflate and determine the size and position of the stomach.

Either part or the whole of such an examination may be made at the first visit, providing the patient comes with a fasting stomach. Whereas if he comes with a full stomach none of these tests can be conveniently carried out at the first visit. Dr. Joslin has already said that several examinations may be necessary to establish a diagnosis.

I particularly desire to emphasize the importance of this point, because I know there are physicians who have the impression that one chemical examination of the gastric contents is sufficient to enable one to make a diagnosis of any gastric affection. Such, however, is not the case. Besides the chemical examination of the gastric contents, the size, shape and motility of the stomach must be determined in all cases, and in many cases new phases of a disease appear which require prolonged study that they may be recognized and properly treated.

The average amount of gastric contents obtained one hour after the administration of an Ewald test meal has been stated by the reader as 90 cc., or 3 oz. I consider this amount a very fair average, but one must remember that it is only an average, the maximum and minimum normal limits being very wide, varying from about 20 to 150 cc.

A healthy student upon whom I recently made some tests yielded, on several successive days, from 120 to 160 cc. of gastric contents. On a certain day preceding a school examination which he was to take, I was able to obtain only 10 cc. one hour after the Ewald meal, and this gastric juice contained no free HCl, whereas on the previous examinations the free HCl had always been normal. This temporary suppression of the gastric secretion I attributed solely to nervousness arising from anxiety over his pending school examination.

Small amounts of gastric contents are obtained in the conditions referred to by Dr. Joslin, namely, in diminished secretion, in hypermotility of the stomach and in cases of patent or lax pylorus.

In these conditions it is frequently, I may say usually, necessary to introduce the stomach tube within thirty or forty minutes after giving the Ewald meal, to obtain any contents for examination.

Failure to obtain the average amount of gastric contents one hour after the Ewald meal does not necessarily indicate the existence of one of the conditions just mentioned; it may mean that the entire contents of the stomach have not been removed.

Lavage of the stomach will clear up this point, because if the contents have not been entirely removed crumbs of bread and cloudiness of the wash water will be observed. Formerly I used (as recommended by some) a Davidson's syringe bulb in evacuating the stomach contents and in 20 to 30% of all cases I obtained small amounts of blood. I now use a different bulb, and do not encounter blood in more than 2 to 4% of all patients. Small amounts of blood, however, are frequently of no significance.

Mucus must *not* be confounded with saliva, which as a rule runs freely down the *outside* of the tube. The former is recognized by its stringy nature and comes of course only from the *inside* of the tube; it is also well seen when pouring the contents from one vessel into another.

Excepting the detection of blood, or food which has been eaten one or two days previous, an examination of the vomitus from a patient does not aid one much in the diagnosis of gastric disease.

Dr. Joslin has stated that during a three months' hospital service he has failed to encounter one case of chronic gastritis.

During a present ten weeks' service I have also not met one case of chronic gastritis. This disease of the stomach, of which we hear so much, is not nearly so common as is generally supposed.

New Instrument.

A CHEAP TRACTION SPLINT.[1]

LOUIS T. WILSON, M.D., BOSTON.

THIS splint was made primarily to fill a need for a cheap, light splint suitable for bed traction on hip cases at the Children's Hospital, Boston. The average hip splint is heavy, requires a skilled mechanic to manufacture it, is therefore costly and thus often beyond the reach of the physician, outside the large cities, who may have hip cases under his care. It was desired, therefore, at the same time, to make a splint of such simple construction and material that it could be easily made by any mechanic, blacksmith or even the physician himself if necessary, at a very small cost. Sheet steel and gas-pipe can be easily obtained in almost any town, and from these materials this splint was made.

[1] Presented at the Annual Meeting of the American Orthopedic Association, Washington, D. C., May 14, 1903.

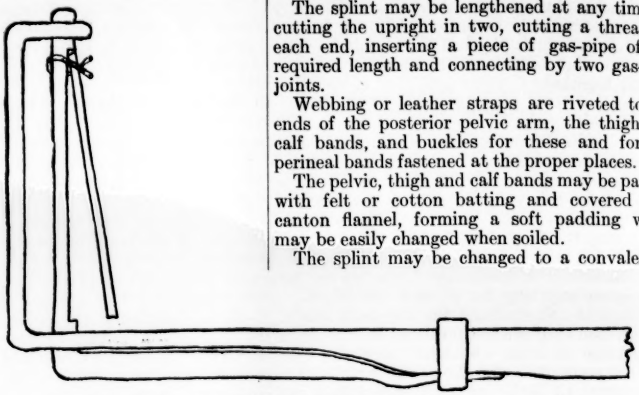


FIG. 3. — TRACTION WINDLASS AND FOOTPIECE.

The upright and foot piece are made from one piece of $\frac{3}{4}$-inch iron gas-pipe. The upright, where it joins the pelvic band, is simply heated and flattened for a distance of about one inch. The lower end forming the foot piece is also heated, flattened and bent to the desired shape. Care should be taken to flatten the pipe for a distance of three to four inches up on the upright to allow a flat surface for the windlass arm.

The traction windlass is made from $\frac{1}{8}$-inch steel wire bent to a right angle. One arm is inserted into two holes bored in the foot piece, while the other lies along the upright, which was flattened and is held to it by a sliding wire ring. The traction windlass may be prepared to hold the extension straps in one of three ways: (1) A slot may be cut in the wire, the straps passed through and caught by a turn of the windlass. (2) Two small wire pegs may be inserted into the wire to fit into holes made in the straps. (3) The wire may be filed flat on one side where it crosses the foot piece, and a flat piece of steel fitted to this. The extension ends are then laid on the flat wire, the steel placed on top and caught at one end by a turn of fine wire. One turn of the windlass arm binds these together and prevents any further slipping.

The pelvic band is cut from sheet steel of the desired gauge (generally No. 10–No. 14), riveted on to the flattened end of the upright and bent to the desired shape. In the large splints it may be necessary to secure a firmer hold on the upright, in which case a tab of steel may be left on the band and this bent around to grasp the upright. Also the arms of the first pelvic band may be made only two or three inches long and a second pelvic band of the required length riveted to this. This gives a firmer band and prevents the perineal straps, when tightened, from drawing the arms together.

Thigh and calf bands are cut from thin sheet steel and fastened to the upright by boxes made from similar steel and riveted to the bands.

The splint may be lengthened at any time by cutting the upright in two, cutting a thread on each end, inserting a piece of gas-pipe of the required length and connecting by two gas-pipe joints.

Webbing or leather straps are riveted to the ends of the posterior pelvic arm, the thigh and calf bands, and buckles for these and for the perineal bands fastened at the proper places.

The pelvic, thigh and calf bands may be padded with felt or cotton batting and covered with canton flannel, forming a soft padding which may be easily changed when soiled.

The splint may be changed to a convalescent splint by removing the foot piece and substituting a piece of gas-pipe ending with a joint into which a piece of rubber or a rubber cork has been inserted.

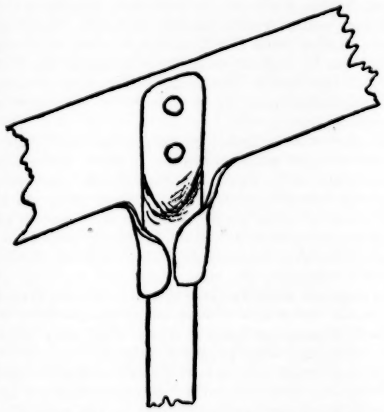


FIG. 1. — METHOD OF FASTENING PELVIC BAND AND UPRIGHT.

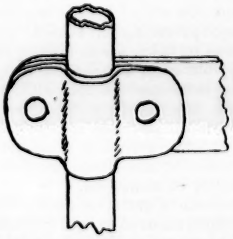


FIG. 2. — METHOD OF FASTENING CALF AND THIGH BANDS TO UPRIGHT.

This splint has been in use in the wards and on young children in the Out-Patient Department of the Children's Hospital, Boston, since March and so far has proved satisfactory. The cost as made in the hospital shop ranges from two dollars and a half to three dollars and a half. Of this, the material costs seventy-five cents to a dollar according to the size. The weight of a 30-inch splint is about eighteen ounces.

Medical Progress.

PROGRESS IN THORACIC DISEASE.

BY JOHN W. BARTOL, M.D., BOSTON.

INFLUENCE OF WIND ON PHTHISIS.

GORDON[1] has studied the distribution of phthisis in certain districts of Devonshire, and concludes that there is justification for the belief that strong, wet winds, when prevalent, have a marked influence in raising the death-rate from phthisis in communities exposed to them, and that this effect is possibly explained by the chilling and depressing nature of the winds and their tendency to excite bronchial catarrh in the inhabitants of such districts.

CONSUMPTIVE CHEST NOT FLAT.

Hutchinson[2] has followed up his preliminary investigation published in 1897, and feels more than ever convinced that the tuberculous chest is round rather than flat, or in other words that prevailing belief and teaching is entirely erroneous. The human chest, with a few exceptions easily accounted for, is the only one in the animal kingdom in which the transverse diameter is the longer, a relation obviously explained by the erect position and the locomotive necessities of the anterior limbs. Measurements taken of series of normal chests show the index of proportion of antero-posterior diameter to transverse to be approximately 70%; in the embryo the index runs up to 105–115, while at two years it is about 94, and from three to seven averages 85. In the tuberculous chest the average of the measurements thus far taken is not far from 80, or, in other words, a persistence of the type normal for the age of fifteen to eighteen years. The apparent flatness of tuberculous chest is an optical delusion due to the condition of round shoulders, and this in turn is the result of the forward displacement of scapulæ on a thoracic wall which is barrel-like instead of flat.

Conclusions of importance are that the existence of such a conformation in a person past the age of eighteen is a sign of arrested development; that it is likely to be precedent to tuberculosis; that systematic measurements should be made in growing children, and flatness of chest favored by appropriate exercises.

[1] Brit. Med. Journ., May 23, 1903.
[2] Journ. Am. Med. Ass., May 2.

TRAUMATIC PERICARDITIS, ENDOCARDITIS AND MYOCARDITIS.

Pleasants[3] concludes that trauma is a much more important cause of disease of the heart than is generally supposed. Judging from the frequency with which pericarditis of any origin is overlooked, he thinks that the traumatic form exists many times unrecognized, and publishes two cases of his own, in one of which the somewhat startling assumption of injury by *contre-coup* is made. Endocarditis definitely shown to have developed in connection with serious injury to the thorax has occurred in one case of his own knowledge and in three other cases from the literature, and it is considered probable that in many instances an endocarditis developing some little time after an injury without other discoverable cause is due to the trauma. A myocarditis set up by trauma in a previously normal heart probably does not attain a development sufficient to cause signs capable of demonstration, and if the heart was previously diseased, a supposed relationship between trauma and myocarditis must be very carefully probed before it is accepted as proven. Altogether five cases are reported which are considered above suspicion.

TIDAL PERCUSSION.

Colbeck[4] complains not only that too little attention is paid to percussing the apices during both inspiration and expiration, but that a mistaken belief in regard to percussion changes produced by this maneuvre is very prevalent; in other words, contrary to general belief and for manifest anatomical reasons, there is above the clavicles in full inspiration a decrease in the limits of pulmonary resonance and in full expiration an increase of the same, while during the same intervals there is respectively a raising and lowering of percussion note. Investigations bearing on this point were reported eighteen months ago, and further study has simply served to confirm the opinion then formed.

LATE SYSTOLIC MITRAL MURMURS.

Hall[5] considers that, when the murmur of mitral incompetence occurs not with but later than the first sound, there exists a marked degree of asynchronism, that the first sound is due to the earlier contraction of the right ventricle and that the later contraction of the left gives not a sound but a murmur. In some cases, however, he grants that the delay may be an apparent one due to the first part of the murmur being inaudible, and also admits as a possible factor the pulling in of the auriculo-ventricular curtains by the contraction of the papillary muscles, shown by Roy and Adami to be the final act in ventricular contraction.

[3] Johns Hopkins Hosp. Bull., May, 1903.
[4] Practitioner, March, 1903.
[5] Am. Journ. Med. Sci., April, 1903.

DIASTOLIC MURMURS WITHOUT LESIONS.

In a series of one hundred and fifty-three autopsies studied with relation to mistakes in physical diagnosis Cabot and Locke [6] found "not a single case in which a diagnosis of aortic regurgitation made during life failed to be substantiated at autopsy," but they are able to report four cases seen within a year in which the demonstration of normal aortic valves discredited the probable diagnosis of aortic regurgitation, based on the presence of a diastolic murmur. Similar instances have been reported by various observers and sundry explanations offered. Of these the most plausible are taken to be: (1) Dilatation of the aortic ring associated with aneurism or diffuse enlargement, or dependent on high blood pressure; (2) tuberculosis of the lungs and pleura, and consequent production of cardio-respiratory murmur; (3) intense anemia, with the relation of thinness of the blood to the production of murmurs still unexplained.

CARDIAC HYPERTROPHY IN NEPHRITIS.

Senator [7] returns to this unsolved question, and endeavors to explain why there is cardiac hypertrophy at all and also why it should especially affect the left ventricle. The investigations of Strauss carried out in his clinic show that there are marked differences between the blood in chronic parenchymatous and that in chronic interstitial nephritis. In the latter is found almost always an increased molecular concentration, an ordinarily normal specific gravity and albumen content, and an increase in the nitrogenous residue (that is, after precipitation of albumen), with consequent increase in the toxicity of the blood — while in the former, concentration is normal, albumen and specific gravity are lowered, and nitrogenous residue not increased. As a result of the toxic matters in the blood not eliminated on account of disease in kidneys, we get changes in the blood vessels with resulting symptoms, varying according to the nature of the process in the kidney. In acute nephritis the irritative effects are most marked — the walls of the vessels very rapidly lose their tone and dropsy ensues at once, and is protective in the sense that it helps remove from the blood the irritating elements; while duration is too short to produce permanent changes in vessel wall or heart. In chronic parenchymatous nephritis the poison works more slowly, the dropsy develops later, and the toxic effect on the heart muscle is gradually shown by hypertrophy; that this hypertrophy becomes so much more marked on the left is because peripheral resistance due to diseased vessel walls is so much more an important factor in the greater circulation than in the lesser. In chronic interstitial nephritis the toxic elements accumulate much more slowly, the vessel wall does not lose its tone, dropsy develops slightly if at all and there ensues the gradual changes in vessel walls and heart with same reason for a preponderance of hypertrophy of left ventricle. In this form of nephritis, however, where the initial renal insufficiency remains for a long time so slight and the consequent accumulation of poison is so slow, it is perhaps necessary to assume some toxic influence within the system independent of the kidney as a starting point for the disease.

[6] Johns Hopkins Bull., May, 1903.
[7] Deutsch. med. Wchnschr., Jan. 1, 1903.

INFECTIVE ENDOCARDITIS TREATED BY RECTAL INJECTIONS.

Duckworth [8] reports one case in which without much doubt of the diagnosis, and after internal treatment with fresh yeast and subcutaneous injection of antistreptococcus serum twice repeated had failed to produce any satisfactory effect, regularly repeated rectal injections of mixed antistreptococcus serum, 10 cc. at a dose, apparently effected a cure.

[8] Brit. Med. Journ., May 23, 1903.

Reports of Societies.

SURGICAL SECTION OF THE AMERICAN MEDICAL ASSOCIATION.

NEW ORLEANS, LA., MAY 5 TO 8, 1903.

JAMES E. MOORE, M.D., President.

FIRST DAY — AFTERNOON SESSION.

H. J. WHITACRE, Cincinnati, read a paper entitled

SUPPRESSION OF URINE; REPORT OF A CASE ENDURING EIGHT DAYS, RELIEVED BY DECAPSULATION OF THE KIDNEYS.

The case was that of a woman aged forty, who took ergot for the purpose of producing abortion. The effect was entire suppression of the urine. She was taken to the hospital, and about 60 oz. of salt solution injected intravenously, with the result that about 5 oz. of urine containing albumin, casts and pus were passed on the third day. The kidneys were incised and decapsulated. The patient left the hospital on the nineteenth day, and nine weeks afterward was perfectly well, and excreting 60 oz. of urine per day.

DR. ALEX. HUGH FERGUSON, Chicago, read a paper entitled

THE SURGICAL TREATMENT OF NEPHRITIS,

in which he stated that he had published an article on this subject about one month prior to the appearance of Edebohls' first article. He reported two cases. The first case occurred in a young man twenty-four years of age, who died three and one-half years after the operation of removal of part of the kidney and decapsulation. He also reported a case suffering from pain in the loins, albuminuria, anasarca and ascites. He had contracted syphilis seventeen years previously, for which he had received mercurial

inunctions. At the time of his admission to the hospital his urine contained 5% albumin. The right kidney was decapsulated, and he left the hospital on the eighth day with only ½% of albumin in his urine. Later he returned for operation on the left kidney, the albumin having increased to 2¾%. He made a good recovery and the albumin has been reduced to $\frac{3}{10}$%.

DR. ARTHUR DEAN BEVAM, Chicago, felt that the value of surgical interference in the treatment of anuria had not been sufficiently emphasized. He divided the condition under three headings for the purpose of treatment: (1) Obstructive anuria; (2) reflex anuria; and (3) nephritic anuria. He preferred nephrectomy to decapsulation of the kidney for the treatment of anuria.

DR. WM. R. JEPSON, Sioux City, Iowa, thought that decapsulation of the kidney would be of little value in cases of chronic nephritis, and that it would do the greatest good in interstitial nephritis, with involvement of the surrounding structures and thickening of the capsule, especially where there is hemorrhage under the capsule.

DR. ARCHIBALD MCLAREN, St. Paul, Minn., felt that the benefit produced in these cases was probably more from the splitting of the kidney than from the decapsulation.

DR. RAMON GUITERAS, New York, said that the operation for decapsulation for Bright's disease was still in its infancy, and that the chief object thereof was to establish an increased circulation in the kidney. He stated that in the records of the autopsies of five hundred cases of chronic Bright's disease, he had found only one case of the pure unilateral variety.

DR. A. H. MCARTHUR, Chicago, reported a case of chronic Bright's disease of both kidneys, proven so to be by segregation, in which he had decapsulated both kidneys, one three months after the other, with decided improvement. During the time between the operation on the first and the operation on the second kidney, the difference between the excretory powers of the kidneys was quite marked.

DR. JOHN R. WINSLOW, Baltimore, Md., reported the case of a young woman who was in a septic condition following confinement, and suffered from pain over the right kidney and pus in the urine. Exploratory operation not revealing a condition that seemed to justify removal, the kidney was decapsulated and punctured, and the patient made a good recovery.

DR. ALEX. HUGH FERGUSON, in closing, referred to the almost instantaneous effect produced in some of these cases, the cause of which he attributed to the relief of the tension in the acute and subacute cases and to the improvement in the circulation in the chronic cases where the kidney had become contracted.

DR. H. J. WHITACRE, in closing, stated that there were various causes producing the condition of suppression of the urine, and believed that it was in those cases resulting from tension, produced by contraction of the capsule, that decapsulation would be of the most value.

DR. B. B. DAVIS, Omaha, Neb., read a paper entitled

INDICATIONS FOR CHOLECYSTECTOMY,

in which he reported twenty-eight cases upon which he had performed this operation, all but 20% of which were entirely cured.

DR. F. A. DUNSMOOR, Minneapolis, Minn., read a paper entitled

THE CALL FOR EXPLORATORY OPERATION IN THE GALL-BLADDER REGION,

in which he urged the value of this method as a diagnostic aid, and also its value in cases where operable conditions were not discovered, reporting two cases in which an exploratory laparotomy and breaking up of adhesions, etc., had been followed by recovery.

DR. WILLIAM J. MAYO, Rochester, Minn., emphasized the necessity for frequent operations upon the gall bladder.

DR. J. B. MURPHY, Chicago, recommended the removal of the gall bladder, unless this procedure was contraindicated, as we would thus remove the two chief causes of recurrence, namely, remaining stones and affections of the cystic duct; but owing to the high mortality following radical operation when infection was present, he felt that it was better to do as little surgery as possible to establish drainage under these circumstances,

DR. A. J. OSCHNER, Chicago, referred to the fact that many cases of gall-bladder disease were not diagnosed, and that more frequent exploratory laparotomy would be of material benefit in this respect.

DR. B. B. DAVIS felt that in those cases in which the condition of the patient was such as to render dangerous the removal of the gall bladder, one should first relieve the acute trouble and then do a cholecystectomy as a secondary operation. He believed that most of the cases of gallstones, if operated on early, could be cured without the removal, but in the complicated cases this procedure was necessary.

DR. F. A. DUNSMOOR, in closing, remarked that when the surgeon attempts to operate on the gall bladder he should be prepared to relieve any condition that may present itself.

SECOND DAY — MORNING SESSION.

DR. VAN BUREN KNOTT, Sioux City, Iowa, read a paper entitled

A CONTRIBUTION TO THE SURGERY OF GASTRIC ULCER,

in which he referred to the fact that about 80% of all gastric ulcers were situated on the posterior surface of the stomach or at the pylorus, thus bringing them in more or less direct contact with the liver, spleen, pancreas, intestines and other abdominal organs, the area of the adhesions and the extent of the intestinal wall infected vary-

ing considerably. Surgical interference was believed to be the only relief for these conditions, and gastro-enterostomy was recommended whether the adhesions be divided or not. Cases were reported bearing out the theories advanced in the paper.

DR. H. D. NILES, Salt Lake City, Utah, read a paper entitled

SURGICAL CONCEPTION OF PYLORIC OBSTRUCTION,

in which he recommended that if the growth be of a cancerous variety it be excised, as the pyloric carcinoma is slow to extend to surrounding tissues, but for the treatment of gastric ulcer he recommended gastro-enterostomy, owing to the likelihood of there being numerous ulcers.

DR. A. J. OSCHNER, Chicago, Ill., read a paper entitled

CLINICAL OBSERVATIONS ON THE SURGERY OF THE STOMACH,

in which he recommended that in all cases of gastric ulcer which did not heal promptly under medical treatment surgical treatment should be instituted, one of the most valuable methods being anastomosis between the lowest portion of the stomach and jejunum, a method which he thought reduced the persistent vomiting to a considerable degree. Three points in making the anastomosis by means of the Murphy button were emphasized: (1) The button must grasp just enough tissue to make a perfect union; (2) it must be at the lowest point; (3) there must be no tension.

DR. WILLIAM J. MAYO, Rochester, Minn., remarked that the surgical treatment was more particularly directed to the complications of gastric ulcer than to the ulcers themselves, and referred to the difficulty of knowing the best mode of procedure if the case was diagnosticated early, for if excision of the ulcer be performed, there is a liability that other ulcers will remain to give trouble afterward.

DR. CARL WAGNER, Chicago, reported the case of a woman who was suffering from a tumor in the center of the stomach about the size of two fists, which had been diagnosed by several surgeons as gastric carcinoma. Exploratory incision revealed that it was simply a mass of the omentum adherent to the parietal peritoneum, liver and gall bladder, and a tumor of similar formation was found in the inguinal region. Both were removed and the woman made a good recovery.

DR. WILLIAM L. RODMAN, Philadelphia, referred to the necessity for extreme caution in separating gastric adhesions, owing to the liability of tearing the stomach wall.

DR. A. H. CORDIER, Kansas City, recommended gastro-enterostomy in preference to excision of the ulcer, since it avoided the cicatricial tissue, which is the primary source of many ulcers.

DR. KNOTT, in closing, merely emphasized the necessity for prompt diagnosis and operative treatment in these conditions.

DR. NILES, in closing, stated that his reason for preferring gastro-jejunostomy was that he believed the ulcers would get well in almost any stage if the stomach were put at rest, which was done by this method, and in excision there was great liability of leaving some behind.

DR. OSCHNER, in closing, stated that he felt that with early recognition of the cases, pylorectomy would become a more favorable operation than it had been in the past. Precaution should be taken to prevent hemorrhage and the gastro-hepatic omentum should be removed.

DR. O. BEVERLY CAMPBELL, St. Joseph, Mo., read a paper entitled

THE SINGLE CUFF METHOD OF CIRCULAR ENTERORRHAPHY; A NEW METHOD,

in which he described in detail the technique of the operation, which he had performed on seventy-five dogs and two human subjects; seventy-two of the dogs recovered and none of the deaths was attributed to the operation *per se*. One of the operations on man was done after the removal of an adeno-carcinoma from the vicinity of the sigmoid flexure, and the patient made a good recovery. The second case was the resection of six inches of the bowel for a chronic fecal fistula following operation five months previously for obstruction of the bowel. Death ensued in thirty-six hours, and was attributed to the previous condition of the patient.

DR. JAMES H. DUNN, Minneapolis, Minn., read a paper on

INTESTINAL RESECTION, WITH REPORT OF FIFTEEN CASES, NINE WITH THE BUTTON AND SIX WITH SUTURE,

in which he stated that the Murphy button should be used except in cases of end-to-side anastomosis between the large and the small intestine, in which he recommended the employment of the Connell suture, the advantages being that it is simple, continuous and penetrates all the coats, thus insuring the strongest possible union. He emphasized the importance of selecting one method of suture, becoming expert in its use and adhering to it.

DR. J. B. MURPHY, Chicago, believed that a careful recognition of the pathological condition above and below the line of approximation was of more value than the technique of approximation, and believed that fewer failures would result if sufficient of the proximal end of the bowel were removed to leave a perfectly healthy, uninfiltrated intestinal wall.

DR. ALEX. HUGH FERGUSON stated that he had employed almost entirely of late the Connell suture and the Murphy button.

DR. CAMPBELL, in closing, stated that as the sutures did not go through the mucous membrane, he felt that the knots would do but little harm.

DR. JOHN A. WYETH, New York, read a paper entitled,

THE TREATMENT OF VASCULAR TUMORS BY THE INJECTION OF WATER AT A HIGH TEMPERATURE, WITH SUGGESTIONS AS TO ITS EMPLOYMENT IN TUBERCULAR ADENITIS, ABSCESS, FISTULOUS TRACTS, ETC.,

in which he stated that these tumors were chiefly of three kinds — arterial, capillary and venous, the capillary being the most numerous, and that under these conditions he had found injections of boiling water the most efficacious. He reported two cases in the first of which danger of hemorrhage prevented the removal of the growth by means of the knife, but it was successfully removed by this method. The other was a case of arterial angioma. Both operations were done under ether and both were entirely successful. The treatment was recommended in cases of hemorrhoids and fistulæ, and the only objection seemed to be the possibility of embolism.

DR. WM. J. MAYO, Rochester, Minn., stated that after seeing Dr. Wyeth perform this operation on one of the cases reported, he had injected ½ oz. of hot water into a large venous angioma of the cheek, with the result that in two or three weeks it was decreased in size two-thirds, and is now almost entirely gone.

DR. JOHN P. LORD, Omaha, Neb., reported a case similar to that referred to by the last speaker, which had been treated by electrolysis for some time without apparent effect. He then began treatment of the tumor by means of injections of iodine, the circulation in the surrounding vessels being cut off by finger pressure in order to avoid the chief cause of accident,— embolism,— and excellent results followed.

DR. RICHARD H. GIBBONS, Scranton, Pa., felt that this method would be of value in a great many inoperable cases of angioma, and suggested its use in fibroid and other tumors of the uterus.

DR. WYETH, in closing, stated that in all cases where surgical relief was possible, the knife should be employed. In regard to whether or not a thermometer could be attached to the syringe, he felt that the operation must be done too speedily to make this practicable.

FURTHER EXPERIENCE WITH THE VERTICAL OVERLAPPING OPERATION FOR THE RADICAL CURE OF UMBILICAL HERNIA,

was the title of a paper read by DR. W. J. MAYO of Rochester, Minn., in which he called attention to the difficulty of performing this operation successfully in adults, owing to their frequently obese condition, the attenuated abdominal muscles and the fact that the recti muscles are about three-quarters of an inch apart in this region, which is further accentuated by the downward strain present in most cases. The author now advocated, in order to cover the defect, the overlapping from above downward of the aponeurotic structures, which would secure a wide area of adhesion in place of an edge-to-edge union.

DR. A. J. OSCHNER, Chicago, referred to the fact that nearly every textbook on surgery gave for the radical cure of this condition a large mortality and a large percentage of recurrences. This he attributed to the fact that the operation was improperly done.

DR. J. B. MURPHY, Chicago, referred to the dangers from pulmonary edema when the lateral operation is done, because the sutures incapacitate the patient from diaphragmatic breathing; this is avoided by the method recommended by Dr. Mayo, and the opinion was expressed that with the employment of this method there would not only be a decrease in the mortality but a smaller percentage of recurrences.

DR. ALEX. HUGH FERGUSON, Chicago, while not recommending the abandonment of the lateral operation altogether, highly commended this mode of procedure. He thought that by cutting through the transverse fascia one could shorten the peritoneal muscles, and then stitching the sheaths of the muscular tissue one could make a good muscular union.

DR. MAYO, in closing, stated that the excess of peritoneal fat could be removed during the operation, as he had done on two occasions.

DR. W. T. ECKLEY, Chicago, Ill., read a paper entitled,

EVOLUTION OF THE MAMMALIAN STRAIGHT GUT, WITH SPECIAL REFERENCE TO PERITONEAL CHANGES INCIDENT TO ROTATION,

in which he emphasized the importance of a thorough knowledge of the embryonic arrangement, as well as the position in adult life, of the liver, stomach, spleen, pancreas, intestines and other abdominal organs, and he felt that the best way of teaching this subject was by various mechanical devices showing the different developmental stages and also by the study of the lower animals.

DR. WILLIS of California, in discussing this paper, urged upon the members the necessity for the more thorough training of the medical student in anatomy.

THE VALUE OF ENTEROSTOMY IN SELECTED CASES OF PERITONITIS,

was the title of a paper read by DR. FRED. B. LUND, Boston, in which he referred to the very grave condition of diffuse peritonitis with intestinal paralysis complicating appendicitis, respiration perhaps being interfered with by mechanical obstruction, and the patient being in all probability too weak to stand a radical operation. In these cases he emphasized the value of enterostomy as a primary operation, and reported several cases in which it had been performed with good results. The fistula he closed by secondary operation under local anesthesia.

DR. M. B. TINKER, Baltimore, Md., stated that enterostomy had been used in selected cases in the Johns Hopkins Hospital for several years,

the chief objection to it being the fecal fistula, which it is difficult to keep clean, and the liability of excoriation of the skin. Enterostomy he believed to be preferable to colostomy, and in many cases, if properly done, secondary operation is not required. It is of great value in certain cases of intestinal perforation, either appendiceal or typhoidal, where the patient is in too weak a condition to stand extensive surgical procedures.

DR. JOHN B. THOMAS, Washington, D. C., felt that very little good would result from doing the enterostomy unless the cause of the peritonitis was relieved. He recommended that the radical operation be done first, and then, if necessary, an enterostomy.

DR. JAMES B. BULLIT, Louisville, Ky., recommended that enterostomy be used where the patient after the operation developed well-marked tympany, and also for the temporary relief of peritonitis prior to the operation.

DR. F. A. DUNSMOOR, Minneapolis, Minn., recommended the performance of enterostomy when indications seemed to demand it either prior or subsequent to operation, and in cases of perforation he felt that the intestines should be handled as little as possible, and that this operation, in conjunction with the washing out of the abdominal cavity with saline solution, would produce the best results.

DR. LUND, in closing, stated that he would rather close the fistulas than wait for nature to do the work, and that he believed most patients preferred this mode of procedure. He did not believe that the abdominal cavity should be washed out at the time of the primary operation, and if the patient was of easy access he would do nothing more than the enterostomy at that time.

DR. F. D. SMYTHE, Memphis, Tenn., read a paper entitled

CHOLECYSTECTOMY *vs.* CHOLECYSTORRHAPHY AND CHOLECYSTOSTOMY,

in which he stated that the life of the patient demands removal of the gall bladder in malignancy and gangrene, and while not absolutely necessary as a life-saving measure, it is the better procedure to remove it if the cystic duct is obliterated, or if it presents macroscopic evidences of disease, infection, thickening, etc.

THIRD DAY — MORNING SESSION.

SUNSHINE AND FRESH AIR *vs.* THE FINSEN ULTRA-VIOLET RAYS AND THE ROENTGEN RAY IN TUBERCULOSIS OF THE JOINTS AND BONES,

was the title of a paper read by DR. DEFOREST WILLARD, Philadelphia, which he summarized as follows:

(1) Sunlight, fresh air and good food, together with fixation of the joint, are the most important agents in the contest with tubercular infection of the hard tissues.

(2) Direct exposure to the rays of the sun is essential, and all hospitals should be provided with solaria or sun porches and roof gardens.

(3) Patients lying in bed should have the diseased joints exposed to the direct rays of the sun, their heads and eyes being protected by green glasses or shades. The joints may be covered with blue so as to secure easiest passage of the ultra-violet actinic rays, and local medications rich in iodine may be employed as desired.

(4) Tent life on the hospital grounds, or better, in the open pine forest, can be successfully employed through both summer and winter.

(5) Sanatoria should be instituted for tuberculosis of the hard tissues as well as of the soft.

(6) The concentration of the sun's rays by lenses, as suggested by Butler, Finsen and others, is of positive benefit in bactericidal power. As final curative agents, however, the direct sun's rays are more effective. The electric rays are valuable in the absence of sunshine.

(7) The Roentgen rays in the laboratory have an inhibitory power upon the tubercle bacillus, and may prove useful in restraining the growth of these micro-organisms in living tissues.

(8) The actinic rays and the x-rays are both apparently helpful in the fight with tuberculosis, but several years will be required to determine accurately their effect. They should be employed not to supersede but to antedate and to supplement operative procedures, and to assist the mechanical and general therapeutic measures employed.

DR. J. CLARK STEWART, Minneapolis, Minn., read a paper entitled

EPITHELIOMA UNDER THE X-RAY; A PRELIMINARY REPORT OF THE HISTOLOGICAL CHANGES,

in which he drew a careful comparison of the degenerative changes as reported by Ellis and the case which he had studied, which was the case of an epithelioma on the back of the hand of a Norwegian woman fifty-two years of age. Seven sections were removed at varying intervals during the treatment and showed the following degenerative changes: (1) Fatty degeneration; (2) vascular changes; (3) elastic tissue and granular cells; and (4) hyaline degeneration. He believed that the effect of the x-ray upon these conditions was due to a fatty degeneration rather than the degeneration of polynuclear leucocytes described by Ellis.

(To be continued.)

VICTIMS OF THE ALPS. — The "playground of Europe," as the Alpine region has been called, is annually the graveyard of many adventuresome tourists. This year the death roll has been even above the average, for already there have been recorded more than three hundred accidents, resulting in the death of one hundred and fifty visitors. The causes of this unprecedentedly large number of accidents, have been two — cold and stormy weather and the foolhardiness of attempting dangerous ascents without guides. — *Medical Record.*

THE BOSTON

Medical and Surgical Journal

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HYDROPHOBIA.

THE disease hydrophobia, though fortunately of rare occurrence, is so fatal in its outcome and so intimately associated in its genesis with matters of increasing pathological import that our interest in it is, and should be, continually revived. In the issue of the *Medical News* for Aug. 15, 1903, a large part of the number is taken up with articles from various writers on the general subject of hydrophobia, its literature, pathology, prophylaxis and prevention.

Dr. F. L. Taylor writes an interesting paper in which he discusses several of these points, drawing attention to the fact that the disease was originally described by Aristotle, by several men in the eighteenth century and in the beginning of the nineteenth century. In 1871 Galtier produced the disease in rabbits, and in 1880 Nocard and Paul Bert began laboratory investigations on the subject. Pasteur's revolutionary work, which is still bearing rich fruit, is universally known, and it is now generally recognized that the virus of the disease is found in the nervous system, salivary glands, the pancreas and in various other parts of the body. It is not found in the blood. Much work has of late been done upon the pathological anatomy of the conditions with apparently perfectly positive results regarding the nervous system. The names of Nélis and Babés in Paris and McCarthy and Ravenel in this country are well known in this connection. The alterations in nerve cells, particularly of the posterior dorsal root ganglia and other collections of cells, are now generally recognized as practically pathognomonic. Such changes, which have been described as the rabic tubercle, are pictured in this JOURNAL in our issue of Feb. 6, 1902. The demonstration of these alterations, which has now been repeatedly made, is clearly of very great advantage in determining immediately the existence of hydrophobia, and naturally may be accomplished in a much briefer period than is necessary in inoculation experiments.

Dr. Taylor discusses prophylactic inoculations, and reaches the generally accepted conclusion that in spite of a few mishaps the very great value of this method of treatment is beyond question. Regarding serumtherapy he also thinks that there is much future promise that new light may soon be thrown upon this subject. A very considerable work has already been done, but the method up to this time has not been applied to the human subject. More work remains to be done before the method can be regarded as particularly useful, although its scientific possibilities are already evident.

Dr. W. B. Pritchard also contributes a short paper, which concerns itself chiefly with the symptoms and diagnosis of the disease. Dr. H. D. Gill, a veterinary surgeon of New York, in his paper, which was read before the Alumni Association of the Bellevue Medical College, after discussing the general subject, makes the following statements of the precautions to be observed to secure absolute public safety:

(1) To place the city dog handling under proper medical or veterinary jurisdiction; (2) to prohibit all dogs from running at large unless muzzled or, at least, muzzle all dogs in infected areas; (3) to provide separate compartments in the wagon and at the pound for each dog; (4) to provide safe and proper places for the keeping of dogs suspected of having rabies, especially if they have bitten other dogs or a person; (5) every dog bitten by a rabid animal should be destroyed or quarantined for at least one year.

Methods of preventing hydrophobia are discussed by Dr. Follen Cabot, in which he urges, after experimental study, that treatment of the wound is of very great value. He recognizes nitric acid and actual cautery, but has slight respect for nitrate of silver. Mere cleansing of the wound and scrubbing with soap and water he found had some effect. Dr. Cabot makes a strong plea to the profession to make a more thorough study of the subject and not to fail to act promptly in the preliminary treatment of the injury.

It would seem that hydrophobia might quickly be placed in the category of the absolutely preventable diseases, but in one sense this is far more difficult of accomplishment than in diseases like smallpox or diphtheria, which do not occur among the lower animals. So long as animals are kept

as pets, or for domestic or other uses, it is inevitable that a certain amount of hydrophobia will continue to exist. For this reason it is highly desirable that every precaution should be taken that instructions to the owners of such animals should be general and that when hydrophobia is actually discovered, the treatment should be radical and complete.

THE BRITISH MEDICAL ASSOCIATION.

ONE of the most important and far-reaching meetings among medical men is the annual meeting of the British Medical Association. This association gathers together a very large number of physicians each year, is apparently democratic in its organization and usually, in the various addresses which are delivered, voices the spirit of progress in medical matters throughout the world. This year the seventy-first annual meeting of the association was held at Swansea. Commenting on the meeting, the *Lancet* states that the attendance was not so large as usual, which it attributes in part to the remoteness of the place of meeting from any well-known university center. The cause of this year's visit to Swansea was the fact that it met there in 1853 and this year, therefore, commemorates the fiftieth anniversary.

Apparently the effect which Swansea produced upon the visiting members was not altogether enlivening, due in a measure to the unpropitious weather. The following is the description which the *Lancet* gives of the event:

> First impressions of Swansea were not lively, but the courtesy and kindness of every one brightened those impressions. Those members of the Association who arrived at Swansea on July 27 approached the town through a thick, murky canopy of smoke rendered especially disagreeable by heavy rain. Despite the elements, however, the streets were encumbered with a multitude assembled to do honor to their countryman, the Welsh volunteer who had gained the King's Prize at Bisley and was returning to Swansea on that day. Visitors to Swansea had been warned not to expect anything beautiful in the place, and the narrow, monotonous streets, in which no trace of architectural ambition appears, looked their worst in the downpour.

It is an unfortunate fact, but none the less true, that the complete success of these yearly medical gatherings is dependent upon various purely external conditions. Pleasant weather and cheerful surroundings are quite enough to lead to the success of such gatherings, despite the fact that medical communications may not be of an exhilarating character. We have always maintained, therefore, and we think with justice, that it is desirable in selecting a place of meeting that various matters purely external to the supposed main issue should be considered. The *Lancet*, in spite of an attempt at enthusiasm, apparently does not regard this meeting of the British Medical Association as an absolutely complete success. This we suspect was due to the external conditions of which we have spoken and also to the somewhat unoriginal character of certain of the addresses, which were not altogether up to the high standard set in previous years by this association.

The address in medicine was delivered by Dr. Frederick T. Roberts, on the subject of "Infective and Infectious Diseases." In one of the opening paragraphs of this address he says:

> It has always seemed to me desirable that the "Address in Medicine" at the annual meeting of the British Medical Association should be devoted to some particular subject of more or less general interest and not savoring, so far as can be possibly avoided, of the absurd, irrational and most mischievous "specialism" which is so rampant at the present day.

Inasmuch as many members of his audience must have been specialists, it is probable that this somewhat uncalled-for attack was received with coolness. It is always hard to say why specialism, which has arisen through a perfectly natural process of development, should be so viciously attacked by men in high standing in the profession. Such attacks, coming from such sources, can, however, have no other ultimate result than to bridge the gulf which certain men seem to delight in increasing. Certain things it is well to accept and make the best of, and one of these is specialism. This address in general is taken up with a detailed discussion of what has hitherto been accomplished in relation to infectious diseases and adds little new to the knowledge which we already have.

Dr. T. D. Griffiths delivered the president's address, on the somewhat threadbare subject of the "Evolution of Antiseptic Surgery." Here again the history, always edifying, of the development of modern surgical practice was detailed at great length.

A. W. Mayo Robeson, F.R.C.S., gave the address in surgery, consisting essentially of personal reminiscences and the experience gained from the performance of two thousand operations on the abdomen.

At the annual dinner, held also at Swansea, there was a large amount of after-dinner speaking. The toast of "Our Guests and Friends from Over the Sea" was responded to very briefly by Professor Senator of Berlin and Professor Adami

of Montreal. We note no name from the United States.

THE PATHOLOGY OF SMALLPOX.

IN the last number of the *Johns Hopkins Hospital Bulletin* Dr. William Royal Stokes offers an article on the pathology of smallpox based on a careful pathological study of five autopsies and sections and cultures from six non-fatal cases. Dr. Stokes discusses in very considerable detail, yet in concise fashion, the various lesions found in the internal organs and the microscopical appearances in patients dying of smallpox. As a succinct statement of these alterations, the article is of very considerable value, particularly since it is accompanied by a large series of half-tone plates. As already determined by other investigators, Stokes concludes that streptococcus infection is the most striking feature of fatal smallpox and that the course of this infection may be traced from the skin to the general circulation. In four of his fatal cases he found streptococci in the pustules and in the heart, liver, kidney, spleen, lymph glands, pancreas and lung.

We should have expected in any paper on smallpox, written at this time, a discussion, or at least a detailed mention, of Councilman's, Magrath's and Brinckerhoff's recent striking work on the subject. This we miss and, although the paper must be regarded as a certain addition to our general knowledge, it is hardly to be considered as a wholly modern view of the smallpox question, owing to the omission of the recent protozoa theories.

MEDICAL NOTES.

FRENCH CONGRESSES ON ALCOHOL AND TUBERCULOSIS. — It is announced that the First National Anti-Alcohol Congress is to be held from Oct. 26 to 29 in Paris. The attempt will be made to outline the present state of affairs regarding alcoholism and, in the second place, to plan out a comprehensive method of combating the evil. The French Congress to combat tuberculosis also meets on the same dates at the amphitheatre of the Faculty of Medicine in Paris.

RETIREMENT OF PROF. KARL SCHÖNBORN. — It is announced that Dr Karl Schönborn is to resign his professorship at the University of Würzburg because of illness. His life has been a peculiarly active one, particularly at the time of the Franco-Prussian War, when he had charge of various clinics at Berlin, Langenbeck and Bardeleben, having left for the seat of war.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.— For the week ending at noon, Aug. 26, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 35, scarlatina 17, typhoid fever 25, measles 14, smallpox 0.

THE ADULT BLIND. — At a recent meeting of the Executive Council, Governor Bates of Massachusetts made nominations for a new commission on the adult blind as follows: Dr. Edward M. Hartwell of Jamaica Plain, Miss Agnes Irwin of Cambridge and Alpheus H. Hardy, Esq., of Boston. This commission is appointed under a resolve of the last Legislature for the purpose of investigating the condition of the adult blind. The resolve provided that the commission should serve without compensation, but might employ such assistants as required and also be provided with funds necessary for traveling, etc. Its object is to investigate the condition of the adult blind within this Commonwealth, to consider means of amelioration and the possible expediency of an industrial training school or other institution, a report to be made to the General Court on or before Jan. 15, 1904.

NEW YORK.

ARREST OF BABY INCUBATOR EXHIBITOR. — A baby incubator exhibit having been established at Coney Island, the Society for the Prevention of Cruelty to Children recently caused the arrest of one of the proprietors on the charge of conducting a "baby farm." The case was brought to the Coney Island Court, and Dr. Martin A. Cooney, the inventor of the incubator, being called upon to testify, stated that in Buffalo the lives of fifty out of fifty-two infants had been saved by its means and that out of nineteen cared for thus far at Coney Island, but one had been lost. In order to enable the court to come to an intelligent decision in the matter, a committee, consisting of Dr. William Brennan, of the State Medical Board, the Superintendent of the State Charities Department and the President of the New York Board of Health, was appointed to investigate and express an expert opinion. As a result, the committee were so favorably impressed with the merits of the apparatus that they recommended that at the close of the exhibition at Coney Island the incubators should be purchased by the city, half of them to be sent to Bellevue Hospital and the others to the Kings County Hospital in Brooklyn.

PLANS FOR THE NEW WOMAN'S HOSPITAL. — The plans for the new Woman's Hospital to be erected in West 110th Street have just been filed with the Building Department. The hospital will be six stories in height, with basement and attic, and will have façades of granite, limestone and terra cotta. The main building will be 188 feet in length and 40 feet deep and there will be two wings, each 60 feet long and 40 feet deep. In the basement will be a pathological museum and a clinic for out-patients and the first floor will contain, besides the administration offices, a lecture hall and a chapel with a seating capacity of one hundred and fifty. The cost is estimated at $610,000. The Woman's Hospital was founded by Marion Sims and its surgeons have always maintained it in the first rank of such institutions.

THE STONY WOLD SANITARIUM. — The Stony Wold Sanitarium at Lake Kushaqua, fifteen miles from Paul Smith's in the Adirondacks, was formally opened on Aug. 15 with addresses by Bishop Potter and Dr. E. L. Trudeau of Saranac Lake. Among the large assemblage present were a number of New York physicians who are especially interested in the subject of tuberculosis: Drs. James E. Newcomb, whose wife is president of the institution; H. M. Briggs; Alfred Meyer; Charles H. Knight; Charles M. Cauldwell and S. Knopf. The money for the establishment of Stony Wold, the movement for which was inaugurated as long ago as 1891, has been raised through the efforts of the ladies of New York. The institution is intended for women and young girls suffering from incipient tuberculosis. The expenditure thus far has amounted to more than $150,000, and some $30,000 is still needed to bring it to completion. One of the most attractive of the buildings is the Memorial Dormitory, costing $38,000, of which $20,000 was given by Henry Sigel. Probably the largest single donation to the sanitarium was one of $25,000 by John D. Rockefeller.

LAWS FOR THE PROTECTION OF CHILDREN. — Several laws enacted at the last session of the Legislature for the better protection of children will go into effect on Sept. 1. One of these will meet a condition which has given rise to much complaint. In the past, children under sixteen were frequently held in station houses and places of detention over night and sometimes longer, to the prejudice of their health and morals. This new law provides that whenever a child under sixteen is arrested in any city of the first class for the violation of a corporation ordinance or other minor offence, or for peddling newspapers without a license under the recent newsboys' license act, the police captain or sergeant before whom the child is brought may accept in lieu of bail the personal recognizance, in writing, without security, of a parent, guardian or lawful custodian of such child, to produce the child before the proper magistrate at the time required. By another act the general establishment of children's courts, which have proved beneficent in the larger cities, is made obligatory, the new law requiring that all cases involving the commitment or trial of children actually or apparently under the age of sixteen shall be heard and determined apart from a trial of other criminal cases. A separate docket and record shall be kept and, so far as practicable, a separate room used, to be known as the "children's court."

Miscellany.

CHOLERA IN THE PHILIPPINES.

CHOLERA showed an increase a few weeks ago in the number of cases reported from the provinces to the Manila Board of Health and nearly all the large islands still have foci of infection. Several sharp little outbreaks have occurred, particularly in the southern islands. Thus at Panay, on the island of Panay, 47 cases with 29 deaths were reported as occurring in one day lately. The infection on this island has been very persistent and Panay shows a much higher mortality than any other island in proportion to its population. Cholera exists in the most northern and most southern provinces of Luzon, and a considerable number of cases are occurring in a few badly infected villages. In the provinces near Manila, sporadic cases crop up every now and then. Cholera has occurred on a number of boats returning to Manila from provincial ports, but these have been held up and the vessels sent to the Mariveles quarantine. Manila has been free from cholera for more than two months, but twelve cases having occurred since the beginning of the year. Four cases developed lately on the waterfront, however, in which the disease could not be traced to any outside source, and there is no reason why Manila, like some of the provincial cities, should not have a few foci of infection still existing and ready to light up another outbreak with the onset of the rains. There is also a strong probability that foodstuffs brought in from the surrounding country are occasionally infected and this matter of infection of a food supply is much more difficult to handle here than it would be in the United States. There is no way of confining the population to the use of foods which are known not to be infected, as nearly all the articles of food eaten by the Fili-

pino are used fresh, there are practically no facilities for cold storage and tinned articles of food are too costly to ever become even an important article of diet with the native. "Living from the can" was a resource for the foreigners here which undoubtedly saved many lives in the past year; but it was financially beyond the power of the poorer natives to take advantage of this means of protection. Much rice, fruit, eggs, vegetables, etc., are imported from the Asian mainland, but the ports of departure have been infected and the delay due to necessary quarantine caused all perishable articles to spoil. It was by such imported foods that the original infection gained entrance to the islands. Under the circumstances, and appreciating that the poorer Filipino in Manila does not keep a day's supply of food ahead, it is necessary in practice to modify rules which, in theory, should be strictly applied. The only thing to do is to interdict the sale of certain of the more dangerous foodstuffs and try and educate the natives into using only foods which are fresh and have been thoroughly cooked. This apparently simple task is really most difficult, for it goes against the local customs which have come down from time immemorial; while the native objects to any interference with his habits and customs, and present political conditions require that he shall be handled with tact and diplomacy. Up to date the official reports on the cholera epidemic received by the health authorities show a total of 131,846 cases and 83,300 deaths for the archipelago, giving a mortality of 63%. The first two figures are undoubtedly much too low, as many cases have never been reported; the mortality rate is somewhat too high, as it is based chiefly on the more severe cases, which are most liable to come under official notice. Probably the total number of cases so far should be placed at about 250,000 and the deaths in the neighborhood of 150,000, giving a mortality of about 60%. So far, there have been 4,681 reported cases, with 3,472 deaths, in the city of Manila. In the island of Luzon, the town of Aparri, on the north coast, is reported as being badly infected, with 19 cases and 15 deaths reported for one day alone. The municipal authorities have been denying the presence of the disease and the condition has finally been determined by special inspector sent from Manila. In the meantime no steps were taken to prevent the disease, and the latter has taken advantage of the opportunity to spread to several neighboring villages. The military authorities in the vicinity had early recognized the presence of the disease and promptly took steps which have prevented the troops from becoming infected. As soon as the presence of cholera in Aparri was officially stated, a number of towns quarantined against that city and vigorous repressive measures were instituted. Unfortunately, a number of the natives, learning of the presence of the inspector and appreciating that cholera did exist, promptly scattered among the provincial towns to avoid the quarantine which they felt sure would be instituted.

Correspondence.

ADVANTAGES OF SMALL DOSES OF OPIUM.

BOSTON, Aug. 20, 1903.

MR. EDITOR: The object of this communication is to assert the benefits to be derived from moderate and even small doses of opium, in certain cases. To quiet pain and to procure sleep mean also to rest the nervous system and to strengthen the whole body. It is well known that small doses of opium are stimulating and large doses narcotic. I believe that moderate doses possess both these properties.

Chronic disease is usually organic. Organic disease is incurable. But peace and life may be conserved by moderate doses of opium — I mean by not exceeding one grain of opium in twenty-four hours and often by half a grain of opium. This may be considered equivalent to one sixth of a grain of morphia or to one twelfth of a grain of morphia respectively. But the effects of opium and morphia are different. Crude opium (the gum) in suppository, by the rectum, is one of the best forms. When given by the mouth, a preparation called Liquor Opii Compositus, made by Squibb, has been used by me a long while, with unvarying effect. Seventeen drops of this fluid contain one grain of opium. By suppository, one half a grain of crude opium is often sufficient.

Finding a case of cancer of the rectum, high up, in a middle aged female, I began with one half a grain of opium in the rectum daily. This was enough for several months; the patient lived about fourteen months and the amount of opium was very slowly increased, but was never large. Now if one had begun with the common remedy of one quarter of a grain of morphia and a little extract of belladonna, as is often done, the increase to one third, one half, one whole grain of morphia would have followed and with some bad results. Begin low down, as little as will palliate. Increase with reluctance; one half a grain of opium by rectum, each twenty-four hours, has now been in use six years, by a patient with colitis, mal-assimilation and two to four painful stools each morning.

Five drops of Squibb's Liquor Opii Compositus, in a delicate female, will sometimes suffice to quiet moderate neuralgia and procure a nap; ten drops is a tolerably narcotic dose and lasts all night; fifteen drops will be needed for colic, if severe. Meanwhile the use of the solid extract of valerian will help nervous wakefulness and the restlessness of afternoon hectic, and when this fails, bromide of sodium will suffice, but its after-effects are depressing. Opium is not depressing, and when used habitually, in moderate doses, is not constipating.

Assafetida is a very valuable adjunct; it is quieting, supporting and stimulating. Now we shall surely find that the piling up of doses of morphia is disappointing. Especially in promoting euthanasy, morphia in moderate dose does all it can do; in larger and larger doses it absolutely fails. In such distressing and fatal conditions, chloral may be tried with success, but chloroform, by inhalation, should be allowed, provided the friends understand and wish it and the patient longs for unconsciousness. Bear in mind, when the breathing is shallow, that death from chloroform may follow.

Truly yours,
DAVID W. CHEEVER.

APPENDICITIS IN A PATIENT WITH TRANSPOSED ORGANS.

211 STATE STREET, PORTLAND ME.,
Aug. 21, 1903.

MR. EDITOR: Maggie L. came into my service June 11, 1903.

Examination showed general septic peritonitis, probably appendiceal in origin. The apex beat was found in the right chest one inch to the right of and on a level with the right nipple. Incisions in the abdominal wall showed a complete transposition of all the abdominal organs. The appendix, surrounded by a large abscess, was found on the left side, the rectum being in the normal position of the appendix. Postmortem examination confirmed the previous findings. I was unable to obtain permission for a complete autopsy.

Truly yours,
JOHN F. THOMPSON, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 15, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,255	516	37.85	8.76	2.07	21.27	.95
Chicago . . .	1,885,000	483	177	42.02	5.17	.83	25.00	1.60
Philadelphia	1,378,527	426	142	24.64	4.69	1.17	1.40	3.28
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	190	87	34.79	1.58	1.05	20.00	3.16
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	151	55	37.74	5.96	1.98	11.86	4.63
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	73	29	42.47	5.26	—	30.14	—
Boston . . .	603,163	207	69	25.60	4.83	1.93	12.07	2.41
Worcester . .	132,044	36	12	27.78	2.78	—	19.44	—
Fall River . .	115,549	38	18	60.51	7.89	—	42.09	7.89
Lowell . . .	101,959	51	33	43.12	1.96	1.96	1.16	—
Cambridge .	98,639	27	10	33.33	—	—	7.40	—
Lynn	72,497	18	6	5.55	—	—	—	—
Lawrence . .	69,786	18	11	55.55	—	—	50.00	—
Springfield .	69,389	19	8	26.84	—	—	26.31	—
Somerville .	68,110	16	7	25.00	—	6.25	6.25	—
New Bedford	67,198	39	22	43.69	5.12	2.56	35.89	—
Holyoke . . .	49,286	—	—	—	—	—	—	—
Brockton . .	44,873	8	4	12.50	—	—	—	—
Haverhill . .	42,104	14	6	57.12	—	—	28.56	—
Newton . . .	37,794	7	2	—	—	—	—	—
Salem	36,876	15	10	40.00	—	—	40.00	—
Malden . . .	36,386	11	4	36.36	—	—	18.18	—
Chelsea . . .	35,876	10	4	10.00	—	—	—	—
Fitchburg . .	35,069	7	4	14.30	—	—	—	—
Taunton . . .	33,656	11	5	18.18	18.18	—	9.09	—
Everett . . .	28,620	—	—	—	—	—	—	—
North Adams	27,862	12	6	33.33	—	—	8.33	—
Gloucester .	26,121	6	2	50.00	—	16.67	16.67	—
Quincy . . .	26,042	11	4	27.27	—	—	9.09	—
Waltham . .	25,198	5	1	—	—	—	—	—
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,589	4	1	—	—	—	—	—
Chicopee . .	21,031	9	8	44.44	—	—	44.44	—
Medford . .	20,962	2	1	—	—	—	—	—
Northampton	19,883	5	0	20.00	—	—	—	—
Beverly . . .	15,302	—	—	—	—	—	—	—
Clinton . . .	15,161	5	2	20.00	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	4	2	25.00	—	—	25.00	—
Woburn . . .	14,300	6	6	83.33	—	—	66.67	—
Hyde Park .	14,175	3	1	66.67	—	—	33.33	—
Adams . . .	13,745	5	2	40.00	—	—	40.00	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	4	1	50.00	—	—	25.00	—
Melrose . . .	13,600	—	—	—	—	—	—	—
Westfield . .	13,418	9	5	22.22	11.11	11.11	11.11	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	1	—	—	—	—	—	—
Framingham	12,534	2	1	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	1	1	100.00	—	—	100.00	—
Weymouth .	11,344	3	0	—	33.33	—	—	—
Southbridge .	11,368	—	—	—	—	—	—	—
Watertown .	11,077	7	2	28.60	—	—	28.60	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,234; under five years of age, 1,288; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,115, acute lung diseases 189, consumption 338, scarlet fever 16, whooping cough 36, cerebrospinal meningitis 10, smallpox 19, erysipelas 6, measles 12, typhoid fever 55, diarrheal diseases 606, diphtheria and croup 49.

From whooping cough, New York 8, Chicago 9, Philadelphia 8, Baltimore 3, Pittsburg 4, and Cambridge, Fitchburg, North Adams and Woburn 1 each. From erysipelas, Philadelphia 1, Pittsburg 2, Boston 3. From smallpox, Philadelphia 7, Pittsburg 12. From scarlet fever, New York 2, Chicago 2, Philadelphia 6, Baltimore 1, Pittsburg 3, New Bedford 1, North Adams, 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Aug. 1, the death-rate was 14.4. Deaths reported, 4,158; acute diseases of the respiratory organs (London) 110, whooping cough 49, diphtheria 51, measles 84, smallpox 5, scarlet fever 43.

The death-rate ranged from 3.3 in Hornsey to 25.9 in Warrington; London 13.5, West Ham 11.7, Brighton 15.0, Portsmouth 15.5, Southampton 16.6, Plymouth 6.5, Bristol 10.9, Birmingham 12.5, Leicester 13.3, Nottingham 15.9, Bolton 17.1, Manchester 17.7, Salford 15.2, Bradford 15.5, Leeds 16.6, Hull 16.3, Newcastle-on-Tyne 18.3, Cardiff 11.5, Rhondda 17.4, Liverpool 21.2, Tottenham 7.6, Great Yarmouth 20.1.

METEOROLOGICAL RECORD.

For the week ending Aug. 15, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	Rainfall in inches.
S . . 9	29.92	58	61	55	83	97	90	S	E	5	3	O.	O.	.01
M . 10	29.96	70	79	60	80	67	74	N W	W	4	8	C.	C.	O.
T. . 11	29.91	69	78	60	61	88	74	W	S	2	9	F.	O.	O.
W . 12	29.88	69	77	61	83	61	72	W	W	7	11	C.	C.	O.
T. . 13	30.08	64	72	56	58	61	60	N W	W	12	7	C.	F.	O.
F. . 14	30.10	66	77	56	72	58	65	W	N W	7	3	C.	F.	O.
S. . 15	30.09	68	77	58	60	66	63	N W	S E	10	5	C.	C.	O.
☞	29.99		74	58			71							.01

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING AUG. 22, 1903.

A. G. GRUNWELL and W. H. BUCHER, surgeons. Appointed surgeons from June 20, 1903.

J. C. THOMPSON, passed assistant surgeon. Commissioned as such Aug. 10, 1903.

F. W. F. WIEBER, surgeon. Ordered to the "Prairie" Aug. 21.

R. E. RIGGS, assistant surgeon. Detached from the Naval Hospital, Philadelphia, and ordered to the Navy Yard, Washington, D. C.

H. L. BROWN, assistant surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the Naval Hospital, Philadelphia, Pa.

H. G. BEYER, surgeon. Detached from the "Prairie" and ordered to duty as member of a Board on Barracks.

A. D. MCLEAN, assistant surgeon. Ordered to the "Wabash," Boston, Mass.

S. L. SCOTT, assistant surgeon. Ordered to the Naval Hospital, Chelsea, Mass.

J. A. RANDALL, assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va.

F. G. ABEKEN, assistant surgeon. Ordered to the Naval Hospital, New York.

APPOINTMENTS.

DR. CHARLES H. HOLMES of New York has been appointed junior physician at the Manhattan State Hospital for the Insane on Blackwell's Island.

The following changes have taken place in the Faculty of the Tufts College Medical School: E. M. Plummer, M.D., has been elected Professor of Otology in the place of F. L. Jack, resigned; James S. Howe, M.D., Professor of Dermatology; George W. Kaan, M.D., Professor of Clinical Gynecology; John L. Ames, M.D., assistant Professor of Clinical Medicine; Gardner W. Allen, M.D., assistant Professor of Genito-Urinary Surgery; and Charles F. Painter, M.D., assistant Professor of Orthopedic Surgery.

SOCIETY NOTICES.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION. — The thirteenth annual convention will be held at the Hotel Windsor, Atlantic City, N. J., on Sept. 22, 23 and 24, 1903.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. — The American Association of Obstetricians and Gynecologists will hold its sixteenth annual meeting in the Northwestern University Medical School Building, Chicago, Ill., Sept. 22, 23 and 24, 1903, under the presidency of Dr. Lehman H. Dunning of Indianapolis.

MEDICAL SOCIETY OF THE MISSOURI VALLEY. — The annual meeting of this society will be held in Omaha, Sept. 14, 15, instead of 17, as previously announced.

RECENT DEATH.

Mr. Herman D. Osgood, who is said to have been the first to use nitrous oxide gas in dental operations, died Aug. 22, at Concord, Mass.

Original Articles.

THE RESISTANCE OF TISSUES AS A FACTOR IN THE MANUAL REDUCTION OF CONGENITAL HIP DISLOCATION.

BY E. H. BRADFORD, M.D., BOSTON.

It is now universally admitted that the chief obstacle in the reduction of a congenitally dislocated hip lies in the soft parts rather than the bone, and it is manifestly of practical interest to determine which tissues offer the greatest resistance.

It has been a matter of discussion whether the greatest difficulty is encountered in overcoming the altered capsule or from certain shortened muscles. Reasoning from analogy, from normal anatomy and the strength of the capsule and ligaments of the hip, many writers, myself among them, have believed that these rather than the muscles were of the greatest importance in maintaining the dislocated position in a congenitally dislocated hip, as the capsule and ligaments offer the chief obstacle to a dislocation in a normal hip.

The writer has been led to give up the opinion that in the capsular resistance the chief obstacle to reduction is to be found, by his recent experience in operating by incision in certain resistant cases, from which it has been clear that even after all capsular contraction has been removed and the capsule entirely freed from any connection with the neck of the femur, the lesser trochanter or the shaft within a half an inch below the lesser trochanter, a formidable obstacle often remains to elongating the limb to its normal length or to placing the head of the femur sufficiently below the acetabulum. If this obstacle does not lie in the capsule it must be found in the muscles; and if in the muscles, it appears to be beyond the limit of skill by manual manipulative reduction where failure or disaster have followed manual reduction. Following this line of reasoning, the question presents itself as to the practicability of using a more thorough division of the muscles as an aid to reduction than has hitherto been employed.

Tenotomy and myotomy have been tried in the reduction of congenital dislocation of the hip by a few surgeons, but the method has not received general acceptance, perhaps because the attention of the surgical world has been turned to other methods, and perhaps also to a degree because the precise usefulness of the method has not been carefully studied. Tenotomy alone will not cure clubfoot. It is only within a century that its general use was advocated. At one time, however, tenotomy was regarded as the only important factor in the correction of clubfoot by surgeons, and relapse was the usual result. It is certainly true that myotomy and tenotomy of the muscles around the hip in congenital dislocation are of no benefit unless used in connection with careful manipulation. Now, however, that the manipulative method has been carefully studied and is of approved efficiency, may we not also take advantage of tenotomy as an aid? The objections which have been urged against the use of the knife in congenital correction of deformity are the danger of sepsis, that extensive excision would be needed which would lead to cicatrization and also that it is an unnecessary procedure. Are these objections valid? The subject is one in which anatomical investigation can be made with advantage.

Through the courtesy of Professor Dwight, the anatomical opportunities of the Harvard Medical School were placed at my disposal, and an adult dissecting room cadaver was examined by Professor Dwight and myself to discover the possibility, with moderate force, of lengthening the limb by traction. It was found that where the capsule of the hip joint was freely incised a slight amount of lengthening of the limb could be gained by traction. When the long adductor and hamstring muscles were divided and the fascia lata cut, the limb could easily be lengthened two inches more.

The largest group of the muscles to be considered is the adductors. The glutei have been shown by Hoffa and Lorenz not to be a factor in the problem of congenital dislocation of the hip. The quadriceps extensor, with the exception of the reflected head of the rectus, is a femoral muscle and the reflected head and the psoas iliacus are useful in flexion of the thigh and are of but little importance in the problem to be considered. The adductor and hamstring group are manifestly the most important in their resistance to an abducting and a traction force.

If the muscles of the adductor group are examined it will be found that the structure of the several muscles differs with their situation and probably with their function. The adductor longus, which is the most prominent superficially, is a long-fibered muscle, a companion to the gracilis, and stretched without the exercise of great force. Its attachment to the symphysis is superficial and easily divided by a knife. This muscle presents but relatively slight obstacle to forcible correction either in abduction or downward traction. The adductor brevis, a shorter and thicker muscle, is, as is the medius, attached to the upper part of the femur and serves partly like the quadratus lumborum, the pyramidalis and gemelli, to hold the head of the femur well into the acetabulum. These muscles are not firmly fibered and with comparatively few intramuscular septa. They are beyond the reach of the knife in any practical surgical procedure short of amputation. Their resistance would be to extreme abduction and but little to a downward pull.

The adductor magnus, the largest and strongest muscle of the group, has a double function at its upper attachment to the femur. It acts purely as an abductor and its fan-like insertion along the middle of the femur to the junction of the middle and lower third makes it, with its fan-like intra-muscular septa, its toughness, its broad and strong origin, the most powerful of the whole group. The greater part of the muscle is of fleshy fiber, but the long inner edges and the

lower fibers are grouped into a strong tendon, which passes over and to the inside of Hunter's canal, and is inserted into the tubercle of the adductor magnus above the internal condyle. If this tendon is examined it will be seen that it is one of the strongest tendons of the body. From its position and strength it is clear that it offers the strongest resistance both to downward pull and to abducting force. If this is overcome comparatively little resistance will be offered by the other muscles, and unless this is overcome but little will be gained in resistant cases either in elongating the limb or in increasing the arc of its abduction. It would appear, therefore, that if the long tendon of the adductor magnus were divided at its insertion at the lower end of the femur (a simple and harmless procedure) one important obstacle to diminishing the resistance in correction could be removed. After this correction, force in resistant cases in the direction of abduction is much easier and resistance to a downward pull much diminished.



The hamstring group presents a formidable resistance to a downward pull. The muscles are strong, with long tendinous insertion. They can be relaxed, however, in manipulative correction by flexing the leg, and can be easily divided by tenotomy. The long insertion of the tensor vaginæ femoris or the ilio-tibial ligament presents a formidable obstacle to downward traction. If, however, the limb is abducted, the resistance of the tissue to the success of manipulative correction is slight. The ligament is superficial and can be as easily divided by a tenotome as the planta fascia.

It would appear, therefore, that the chief muscular obstacle in manipulative reduction lies in the long tendon of the adductor and in the hamstring tendons. It of course does not follow that division of these muscles is necessary or advisable in all cases or if done will make the manipulative correction easy, but it follows that this procedure, not a difficult one, will, in the resistant cases, diminish the resistance with no increase in the danger.

The following observations were made at the dissecting room of the Harvard Medical School by Dr. L. T. Wilson, and illustrate the effect of division of the adductor magnus and other tendons on the resistance of a limb to direct traction :

A full-term fetus, twenty inches long and weighing nine and three-quarters pounds, was placed on its back and its pelvis fastened immovably to the table. A traction dynamometer was fastened to the right ankle. A pin was driven into the right anterior spine and another into the right exterior tuberosity of the femur. Slight traction was made to straighten the leg and the distance between the pins measured (*A*). A traction of 30 kilograms was made and the distance measured showing an increase over *A* of one-eighth of an inch. The capsule of the hip-joint was then divided and traction of 30 kilograms made, showing an increase over A of one-half an inch. Tenotomy of the adductor magnus tendon, with an increase over *A* of one inch. The tensor vaginæ femoris was then cut, with an increase over A of one and one-eighth inches. The hamstrings were cut, with an increase over A of one and one-half inches. A traction of 30 kilograms was used each time. Traction was then made to see how far the femur could be drawn down, and at 40 kilograms the epiphyses at the knee gave way. Confirmatory tests on the other leg gave similar results.

An adult male cadaver was taken and the upper half of the body removed at the level of the iliac crests. The pelvis was then fastened immovably to the table and to a heavy post. A dynamometer was fastened around the right ankle and a tackle fastened to this and to a heavy post. A nail was driven into the anterior superior spine and another into the external tuberosity of the femur. Traction of 175 kilograms was made and the distance between the nails measured (*A*). The capsule was then cut (see later remarks) and traction of 175 kilograms made, showing an increase over A of one-half an inch. The tendon of the adductor magnus was tenotomized and traction made, with an increase over A of three-quarters of an inch. The hamstrings were cut and tension made, with an increase over A of three-quarters of an inch. The fascia lata was then cut and tension made, with an increase over A of seven-eighths of an inch.

These results being far from what was expected from Experiment I, investigation was made and

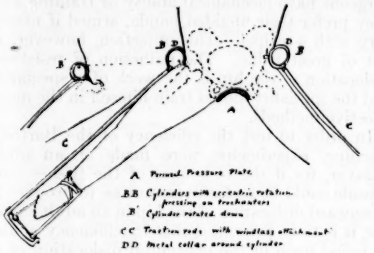
the capsule found not to be divided in many places, especially the back. This was fully cut and tension of 175 kilograms made and an increase over A found to be one and one-half inches.

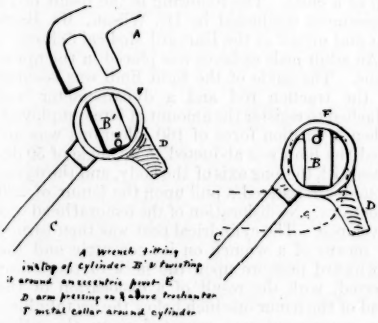
A second hip was treated in the same manner with the following results: A traction of 150 kilograms was used. Measurement of A taken. Increase over A with the capsule thoroughly divided, one-half an inch. Increase over A with the capsule thoroughly divided and a tenotomy of the adductor magnus, three-quarters of an inch. Increase over A with the capsule cut and a tenotomy of the adductor magnus and tenotomy of the hamstring, three-quarters of an inch. Increase over A with the capsule divided and tenotomy of the adductor magnus, hamstrings and fascia lata, three-quarters of an inch. This case, however, was an old dissecting-room subject which had had the skin removed, and the muscles were fairly hard and dry.

Nothing could be more simple than the method of Lorenz in correcting the deformity in a young child, but in the more resistant cases the amount of force necessary brings the operator face to face with the danger either of using too great force and causing an unnecessary injury, or too little force and failing to effect reduction. Fractures of the femur may occur with injury to the soft tissues, due in part to the difficulty of regulating the amount of force used. There is difficulty on the part of the operator in securing the pelvis under his control, as both of his hands are occupied in the manipulation of the leg; the pelvis is left to an assistant. It is impossible that there should be complete harmony of muscular effort, and either too great or too little force may be used, — too great fracturing or bruising tissues unduly, or too little not overcoming the chief resistance, which appears to be the lower tendinous insertion of the adductor magnus. To stretch this muscle efficiently it is necessary that the pelvis be held securely; that there be traction force combined with an abducting force. If this force is arranged in such a way that the trochanter is pressed upon an immovable fulcrum and the limb is sufficiently pulled at the same time it is abducted there must be slight danger of fracture of the femur by crowding the head into the pelvis or resistant tissue. The resistance of the adductor magnus may be assumed to be less than the strength of the shaft of the bone. The adductor magnus protects from motion injurious to the soft tissues and these vessels and nerves cannot be injured until this tendon is stretched, torn or divided.

It is essential that the mechanical force employed should be directly under the control of the operator.

The necessary requirements are met with success in an apparatus devised by Mr. Bartlett of Boston, after careful investigation of the subject and observation of cases and pathological specimens at the Children's Hospital and Harvard Medical School. A full description of the device will be published later, but a less detailed account may be of interest. It consists of two metal cylindrical posts adjustable on a stand to press upon the pelvis above the trochanters. On these metal cylinders metal collars fit, to which a strong steel rod is secured with a windlass traction attachment. A rawhide strip hitched with a clove hitch to the padded ankle of the patient provides for traction to any desired extent, counter pressure being furnished by a metal perineal post. The traction rods are secured to the metal collar, which plays about the cylindrical post. Abduction and adduction, flexion and hyperextension combined with a pull are provided for.





The cylindrical post acts as a fulcrum to the abducting force of the rod, but as the center of this motion is outside of the position of the femoral head, abduction alone will act as a force which will bring the head of the femur from above the acetabulum to its level, if sufficient additional force is applied to stretch the hamstrings and adductors. To secure direct pressure upon the capsule and any contracted fibers which prevent the descent of the femoral head, a superimposed cylinder is placed upon the trochanter cylinder and on this a metal collar is fitted with a handle on one side and an arm on the other, fitted so as to press above the trochanter above and below the femoral neck. If this arm, while the limb is being stretched and abducted and the head pulled away from the ilium, can be forced down, the femoral neck and head will be pressed before it, provided the arm is fitted snugly around the neck and slipping is prevented. This is prevented by a cam motion of the superimposed cylinder, which is worked by a wrench. The surgeon holds the

handle which directs the pressure on the trochanter, and at the same time moves the wrench, forcing the cylinder to revolve, exerting a downward pressure of any required force and with adjustable accuracy. Under this force there is no danger of a fracture of the femoral neck or head, as they are free from resisting pressure. The tissues which will be torn are the shortest tissues alone, which can be torn without danger.

The objection to this appliance is the objection of every surgeon to all mechanical aids. Few surgeons have mechanical ability or training and they prefer their unaided hands, armed if necessary with a scalpel. This objection, however, is not of great value. The reduction of resistant dislocation of the hip is the work of a specialist and the specialist should train himself in the most effective methods.

In order to test the efficiency of the Bartlett machine, experiments were made on an adult cadaver, for if the resistance of the tissues and capsule could be so far overcome as to produce a downward dislocation of the hip in an adult cadaver, it is to be presumed that its efficiency could be relied upon in the congenital dislocation of a hip of a child. The following is the result of an experiment conducted by Dr. Wilson, Mr. Bartlett and myself at the Harvard Medical School:

An adult male cadaver was placed in the apparatus. The ankle of the right limb was secured to the traction rod and a dynamometer was attached to register the amount of force employed. When a traction force of 160 kilograms was applied the limb was abducted to an angle of 50 degrees with the long axis of the body, and the dynamometer registered a pull upon the femur of 220 kilograms. No dislocation of the femoral head was developed. The cylindrical post was then turned by means of a wrench on its eccentric and the downward pressure upon the neck of the femur exerted, with the result of a dislocation of the head of the femur one inch below the acetabulum. The experiment was repeated upon the other femur of the cadaver with a similar result. The amount of force required was not carefully registered by the dynamometer, as in applying the force to the upper eccentric the amount of abduction of the limb was lessened, thereby lowering the traction force and the force registered upon the dynamometer remained as before 220 kilograms.

From this it would appear that no mechanical obstacle exists to forcing the femoral head downward from its fixed position by the use of force within surgical limits. Experience with osteoclasis has demonstrated that a pressure of much over 250 kilograms is borne by tissues without injury. A traction force and an abducting force combined with a downward force upon the head of the strongly abducted femur appears to present an economy of effort.

As a complement to these experimental investigations, the principles here presented have been utilized practically at the Boston Children's Hospital in cases of congenital dislocation of the hip under treatment for the last four months.

The method of manipulative reduction with the aid of tenotomy of the adductor magnus tendon has been performed at the Children's Hospital in three cases. These cases were not of the most resistant type, but the aid given to the manipulation, making the correction much easier, was apparent.

Correction by the aid of mechanical force by the Bartlett machine without tenotomy has been done in a child of nine and in a child of six, fairly resistant cases, with success and much less effort than would be necessary by manual force. A combination of mechanical force and tenotomy was employed with great success in a child of thirteen, the reduction being made with great ease. This method has been tried in two younger children with success, but as the Lorenz method is simple and efficient in the younger cases, mechanical force is unnecessary.

The facts which are here presented for consideration may be summarized as follows:

(1) The resistance offered by the capsule to the correction of congenitally dislocated hips is not more important than that offered by the muscles.

(2) The chief resistance to forcible abduction is from the strong tendon of the adductor magnus.

(3) The resistance to pulling down the head comes from the hamstring group and the long tendon of the adductor magnus and ilio-tibial band.

(4) These resistant tissues can be overcome by small incisions at a distance from the hip.

(5) In the lighter cases manual manipulative reduction is sufficient.

(6) In resistant cases, mechanical force which pulls upon and abducts the limb, arranged so as to also directly act upon the capsule, is of assistance.

(7) Where the tendon of the adductor magnus is so strong that an immoderate amount of force is needed in stretching, it would seem advisable to divide the chief resisting tissues rather than to incur the danger of severely bruising the tissues by the force used. The division of the tendon can be done either before the operation of forcible correction or at the same time.

PRIVILEGED MEDICAL COMMUNICATIONS.

BY DAVID W. CHEEVER, M.D., BOSTON.

IN a court of justice a communication is called privileged if the witness may legally refuse to divulge it; or where he may be protected or sustained by the court, if he declines to answer. Such are the statements or revelations of a prisoner to his legal counsel. A privileged medical communication would be one made by a patient to his physician.

The Roman law protected the physician. And among Latin countries France made it a penal offence for the physician to disclose the confidence of his patient. But the English common law, so

lenient to the accused in most respects, assumes another position in regard to medical witnesses and obliges them to answer, or be held in contempt of court and subject to imprisonment.

"The highest legal authorities in England have decided that medical men enjoy no special privilege with regard to secrets of a professional nature. In other words, no practitioner can claim exemption from answering a question because the answer may or would involve a violation of secrecy, or even implicate the character of his patient."[1]

The law of Massachusetts follows the English law. To quote an authority: "Neither is protection extended to medical persons in regard to information they have acquired confidentially by attending in their professional characters."[2]

Again: "By the common law of Massachusetts the physician is obliged to state publicly, on the witness stand, whatever may have been told him by his patient, even although involving character or family secrets."

Every New England state has the same law; so, also, Alabama, Delaware, Florida, Georgia, Mississippi, North Carolina, New Jersey, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia.

New York, however, follows the Latin precedent and goes even farther, as follows: "No person duly authorized to practice physic and surgery shall be allowed to disclose any information which he acquired in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity."

A similar law governs priests and attorneys. The New York law was subsequently amended so as to allow a physician to testify, in cases of wills, as to the mental or physical condition of the deceased, except confidential communications and such as might disgrace the memory of the patient. The following states have adopted similar laws: Arkansas, California, Colorado, North and South Dakota, Idaho, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, Ohio, Oklahoma, Oregon, Utah, Washington, Wisconsin, Wyoming. Eighteen states copy Massachusetts. Twenty-two states follow New York. The remaining states we are unable just now to determine. Such is the law. What are the evils?

Indiscretion, weakness, fear, sin, all seek the family physician as a father confessor. He holds the honor of the patient and the character and social standing of families in his hands. He knows what no other knows; and he often knows what is unknown in the family itself. In every relation of human life the doctor holds, and holds sacred, the secret history of many families, and carries to the grave with him knowledge which would revolutionize the life of whole communities. The mischief of telling is so much greater than the mischief of concealing, that the simplest principle of expediency should forbid the revelation. Every instinct of honor, propriety, decency, is arrayed against it.

Hippocrates laid an obligation on his students that nothing heard in the sick-room should ever go outside it. The wisdom of former ages is only confirmed by the experience of to-day.

Does any one doubt it? Even judges and lawyers acknowledge its force. Says an English judge: "If a medical man were voluntarily to reveal these secrets, to be sure he would be guilty of a breach of honor and of a great indiscretion; but in a court of justice medical men are bound to reveal secrets, when required to do so." Said a Massachusetts lawyer to an unwilling medical witness, before the trial, "You shall have plenty of room to kick!"

Public opinion, not to consider professional opinion, would revile and contemn the man who betrayed confidence. Such opinion says, "You must not tell." The law says, "It may be dishonorable, but you have got to tell." Can any position be more false and more cruel for the honorable man?

I quote the London *Lancet* of May 9, 1896, on the Playfair case: "Never was the question of professional etiquette more forcibly presented. There is no written code to guide the practitioner." "There are [things] which it would be subversive to every moral rule to divulge; there are those which it is his bounden duty to disclose. It is a safe formula that, unless there are overpowering reasons to the contrary, a patient's secret should be held inviolable by his medical adviser, almost, if not quite as binding as the confessional of the Roman Catholic Church. When it involves the commission of crime, morality and justice require the breaking of a confidence." Says Taylor's "Medical Jurisprudence," edition of 1897: "The safer rule for the physician is never, under any circumstances, to reveal the confidence of his patient, and to preserve inviolate any secret obtained in the course of his professional practice."

The doctor in a court of law is in a false position — false in proportion to his sense of honor. Some would go to prison rather than betray a confidence — some would consider (and so say the judges) that the law absolved them. The law should recognize the rights of the patient, the duties of the medical man and the justice due the community.

How can these difficulties be reconciled? We propose the following for consideration:

It shall be considered unprofessional for a physician to divulge anything confided to him by a patient, unless:

(1) With the patient's consent.
(2) To defend himself when accused.
(3) To expose crime.

In all other cases, such professional confidences shall be classed as "privileged communications." It shall be a question of honor whether the physician shall feel it his duty to repeat such a "privileged communication"; if he conscientiously declines, he shall be protected; if he testifies, it shall be before a judge, in private.

[1] Prof. Tidy.
[2] Greenleaf on Evidence.

THE WORKINGS OF THE NEW YORK LAW.*

BY WALTER SOREN, ESQ., BROOKLINE, MASS.

THE original form of the New York law in regard to confidential communications between physician and patient (passed at least as early as 1836) is as follows: "A person, duly authorized to practice physic or surgery, shall not be allowed to disclose any information which he acquired in attending a patient, in a professional capacity, and which was necessary to enable him to act in that capacity."

The best way to treat the subject is to illustrate as well as possible by citing cases how the New York courts have construed the most important points in this statute.

In its practical application the statute has been considered as passed solely for the protection of the patient and has been construed somewhat liberally in his favor. Under recent amendments allowing the privilege of secrecy to be waived by the patient or his heirs, no other parties can be allowed to take advantage of the statute if the proper waiver has been made.

Another practical point is that a party at a trial wishing to take advantage of the statute must claim the privilege and show that he is entitled to it, as soon as the objectionable question has been put. If he waits to see whether the answer is favorable to him or not, it is then too late to object in any form.

Theoretically, I shall invite your attention to only three points in this statute which have been passed upon by the higher courts of appeal:

I. What shall be considered to constitute the relation of physician and patient?

II. In any given case, what shall be considered as information "acquired in attending a patient"?

III. What information shall be considered as "necessary" to enable the physician to act as such?

Instead of trying to give a complete answer to any of these questions in abstract form, it has seemed more in accord with the general idea of this paper to cite a number of cases on each point and thus afford a good opportunity for the formation of individual opinion as to the working of the law. The cases from "N. Y." reports are of undoubted authority. Those from Hun and "State" reports are the decisions of inferior courts, but are in accordance with the principles laid down by the higher court and are believed to be good law. Each case should be considered with particular reference to the point under which it is cited, as it has not been fully considered or reported with reference to such other points in it as may seem important on general principles.

The cases are also arranged as nearly as possible with reference to their closeness of application.

I.

First, those referring to the relation of physician and patient:

At the trial of an action involving the validity of a certain will,[1] it appeared that a short time before the execution of the will and the testator's death, the attending physician called another physician, who attended in consultation as to the testator's condition and treatment. One of the parties called the consulting physician as a witness and desired to show by his testimony whether the testator was in a conscious or unconscious condition when examined by him.

It was decided that the relation of physician and patient arose here, under the circumstances, even though the patient might not have known or recognized the consulting physician, and that the consulting physician therefore could not testify as to the condition in which he found the patient.

On an inquisition as to sanity by a jury before commissioners,[2] held some time after the patient had been set free from an asylum, evidence was offered of the opinion of certain physicians who had treated him at the asylum as to his condition when he left. On objection being made on behalf of the patient, it was decided that these physicians could not give their opinion as requested, inasmuch as it was necessarily based upon facts observed while treating him professionally.

At a trial of an action against a life insurance company [3] to recover the amount of the policy, the defence was that the insured had made a false statement in his application as to the health of a brother. It appeared that a month before the application was made, a physician had examined the brother's physical condition at the request of the brother's employer, who received the physician's report and paid him his fee. The physician told the employer that the man was not well enough to continue in business, and also told the brother that he was hopelessly ill, but did not prescribe for the case or give any advice as to its treatment, or have any further connection with it. It was decided, however, that the physician could not be allowed to testify as to the results of the examination, as the patient was entitled to the privilege of secrecy on properly submitting himself to a physical examination, whether or not it was for his own benefit or at his own expense.

At the trial of an action against a railroad company to recover damages for personal injuries received in an accident,[4] the defendant called as a witness a doctor (usually employed by it as an expert), who testified that some two weeks after the accident the attending physician of the plaintiff brought the latter to the office of the witness and asked him to examine the plaintiff and see what was the matter with him. He testified that he made an examination and among other things examined the ribs. He was then asked the question, "Did you find any fractured rib?" It was decided that this might be answered, inasmuch as it was not shown that the witness was requested or expected to treat or prescribe, or to advise respecting treatment, or that he did either.

In a case where the sanity of a person on trial for murder was drawn in question,[5] it appeared that certain physicians had been sent to the jail by the district attorney to make an examination of

* Read at the Annual Meeting of The Massachusetts Medical Society, June 10, 1903.

the prisoner's mental and physical condition. It was decided that they might properly testify as to their opinion of the prisoner's mental condition, merely as they saw him in the cell and in the court-room, but could not testify as to any statements that he made or as to his physical condition.

These cases are sufficient to bring out the most important of the points involved in the first question.

It will be desirable here to mention the following amendment, passed in 1893: "In an action for the recovery of damages for a personal injury, the testimony of a physician or surgeon attached to any hospital, dispensary or other charitable institution, as to information which he acquired in attending a patient in a professional capacity at such hospital, dispensary or charitable institution," shall be taken before a referee, but the court may in its discretion summon him as a witness.

No case has been found involving this amendment, but it does not seem to contain any points of obscurity. Since this amendment was passed one or two cases have been decided in which it might have had some application, but it does not appear to have been taken into account. However, they are of interest on the general subject.

The question arose in one case at the trial of an action brought by a minor against a street railway [6] to recover damages for personal injuries received in an accident. The defendant's counsel called as a witness a physician, who testified that he went with the hospital ambulance to take charge of the plaintiff at the time of the accident, and on the way to the hospital asked him various questions as to how the accident happened, etc.,[7] all, however, in compliance with the rules of the hospital as to his conduct in the treatment of patients. The court decided that the witness might properly state what the plaintiff said to him as to how the accident happened.

Three justices dissented to this opinion, very properly calling attention to the point that the witness distinctly asserted that whatever information he acquired from the patient was in reference to his condition and for the purpose of prescribing for him.

In a somewhat similar case,[8] the physician who attended in the ambulance came to the patient's room in the hospital some ten days after the accident and asked him some questions as to how it happened. The trial judge said, "I think the doctor came there with the assumed authority that a doctor would have in such a place and the communication was privileged." [9] However, it was decided that the relation of physician and patient did not appear under the circumstances to exist in any such sense as to bring the case within the privilege of the statute.

In this case the patient was a child only six or seven years old, and it would seem, under the circumstances, as if the trial judge took the most sensible view. In both the above cases, however, the result would probably have been the same if the amendment had been used.

II.

The second point is on the question of what, in any given case, shall be considered as information acquired in attending a patient.

On the trial of an action in which the physical condition of a certain person during the last year of his life became material,[10] a physician was called as a witness, who testified that he had attended the decedent professionally during the year 1879 and the first few months of 1880. At that time the professional relation ceased, but from then on it appeared that the witness often saw the patient informally and observed his condition in that way until the patient died in November, 1881.

It was decided that the physician might testify as to the patient's condition as it appeared from observations of outward visible facts, open to the sight of any person and seen by him on occasions when not attending in a professional capacity.

The next case is one showing the beginning of the exercise of some ingenuity in avoiding the effect of the statute:

In an action to recover the amount of a life insurance policy,[11] a question arose on a warranty in the application as to the health of the brother of the insured. A physician who had attended the brother professionally and whose whole knowledge of the case was acquired at one interview, was called as a witness by the defence. Of course his testimony as to the results of his examination was inadmissible, but he was asked this question: "What opinion did you form of the case, based on the general sight of the man before you made an examination, or before you had any conversation with him?" It was decided that this question was not admissible, although it related to facts observed by the physician without the necessity or aid of any confidential disclosure, or any physical examination. It was enough that the observation was permitted to the witness in his character of physician and in the due and proper exercise of his calling.

The next case presented an excellent opportunity for the exercise of some ingenuity in evading the operation of the statute, but it was not fully taken advantage of:

At the trial of a case involving the validity of a certain will,[12] where the testamentary capacity of the maker was drawn in question, a physician was called as a witness who had attended the deceased in a professional capacity and also for a considerable period as a friend and not professionally. It appeared from the preliminary questions, however, that the impressions he acquired on the friendly visits necessarily related back to and were influenced by the knowledge he acquired during his professional visits. Of course it was decided that he could not be allowed to testify.

The next two cases, however, seem to have been prepared with great skill:

At the trial of a case in which the validity of a certain deed was drawn in question,[13] a physician was called to testify as to the mental condition of one Eliza Fisher at or about the time when she

executed the deed. It appeared that he had attended her professionally and had also seen her at various times when he was not in attendance for the purpose of treating her professionally He was asked various questions as to her mental condition and requested at the same time to exclude from his mind, in answering, any knowledge or information which he had acquired as to her condition while attending her professionally, and to confine his answers to such knowledge and information as he had obtained of her by seeing her when she was not his patient. Of course the questions were all objected to, but it was decided that they might be answered, because they were so framed as to exclude evidence being given of impressions obtained while the witness was attending his patient in a professional capacity.

At the trial of an indictment for murder,[14] the prosecution called as a witness the physician of the jail where the prisoner had been confined for the preceding six months and proceeded to ascertain his opinion of the mental condition of the prisoner at the time the murder was committed, by putting certain hypothetical questions based upon symptoms which had appeared before the prisoner came to the jail and which had been observed and testified to by other witnesses. The witness was requested, in answering, not to allow his actual knowledge of the case to influence his opinion and replied that it was impossible to do this entirely. As the question was in proper form, however, he was allowed to answer, making what effort he could to comply with the requirements of the question.

It is no more than fair to call attention to the facts that this was a criminal case and also that the relation of physician and patient here was official only. If it had been a civil case the rule would probably have been applied in the same way as in the "Darragh" case just cited.

The foregoing cases give some idea as to what the statute means by the relation of physician and patient; and what information is considered as acquired "while attending the patient."

It remains to examine the point as to what information is considered "necessary" to enable the physician to act as such (and therefore privileged).

Here, more than in the other two points, there has been difference of opinion between the higher and lower courts and also some change in the general opinion since the statute was enacted. It is a good example, too, of how the operation of a statute may be modified and directed by judicial construction. The cases cited will show that while the word "necessary" has received a somewhat broad construction, it is not extended to include in any way matters not directly relating to the patient's mental or physical condition.

The first two are cases where the facts in dispute could not have any effect upon the professional conduct of the practitioner and were not facts regarding the condition of the patient.

III.

WHAT KIND OF INFORMATION SHALL BE CONSIDERED NECESSARY.

At the trial of an action against a railroad company to recover damages for injuries received in an accident,[15] the defendant called the attending physician and asked him this question: "Did the plaintiff state to you on the day when you first called on him that he did not observe the train until he was struck?" This question was objected to, but the court decided that in such a case, nothing the patient could say in regard to his observation of the train could have been either material or useful to the physician in his treatment, and therefore the question might properly be answered.

In another similar case,[16] it was held that the physician who attended a person injured in an accident at a railroad crossing might testify to the statements of his patient of means taken to warn him of the approaching train and which he did not observe untilit was too late.

The next two cases deal with facts relating somewhat to the patient's condition:

At the trial of an action against a mutual benefit association to recover the amount of the policy,[17] it appeared that the deceased had, about a month before he died, in order to get reinstated as a member, made a certificate to the effect that he was in good health. The sole defence to the action was that the certificate was untrue.

It was decided that the physician who attended the insured in his last illness might testify as to the number of calls he made on the deceased, the dates of the calls and that the patient was sick and thus contradict the certificate without disclosing any information intended to be protected by the statute.

At the trial of an action against a railroad [18] to recover damages for personal injuries sustained in an accident, the defendant called as a witness a physician, who testified that the day after the accident the plaintiff called and consulted him. He was then asked if he conversed with her and made an examination of her with regard to her injuries. It was urged in support of this question that it did not appear to call for the disclosure of any information that was necessary to enable the witness to act in a professional capacity. But the court said that the inevitable inference was that the information given to the physician by the patient, whether it related to her injuries or not, would not have been imparted except to aid the witness in prescribing and, therefore, under a liberal construction of the statute, the witness could not state the particular injury as to which the plaintiff consulted him. It will easily be appreciated, too, that the question could not have been answered either Yes or No, without disclosing the fact as to whether the patient was then suffering from her injuries to such an extent as to require treatment.

At the trial of an action brought by a woman against a town to recover damages for personal injuries received by falling on a defective side-

walk,[19] the plaintiff claimed and offered evidence to show that among other severe and serious injuries caused solely by the accident was an umbilical hernia. The defendant then called the plaintiff's family physician as a witness, and he testified that he had attended the plaintiff in a case of childbirth about a year before the accident. At this point the plaintiff's attorney objected, and it appeared that the defendant was about to prove by the witness that the hernia complained of had existed before the accident happened. It was claimed that if the physician discovered the hernia while treating the patient, but did not treat her for it, and the knowledge of its existence was not necessary to enable him to give the treatment he did, he ought to be allowed to testify in regard to it.

The court decided, however, that the witness could not be allowed to testify in regard to the hernia, because the very nature of his employment compelled its disclosure to him, and in this sense the information he acquired as to its existence was "necessary."

It would not be very easy to sum up the result of these and many other cases that might be found in regard to this third point, but it may be put pretty accurately as follows:

Information acquired by a physician in his professional capacity shall be considered necessary to enable him to act, whenever it relates to the patient's mental or physical condition, whether acquired by direct examination or incidentally and whether or not the condition so observed be the particular subject of treatment either at that or at any other time.

HOW THE STATUTE MAY BE WAIVED.

After the statute in its original form had been on the books some forty or fifty years and had worked a great deal of injustice because any one could take advantage of it, the brilliant idea occurred to somebody that as the law was made entirely for the benefit and protection of the patient, it would be no more than fair to allow him to waive it when its operation would work him a great injustice. Accordingly, in 1877 an amendment was made, allowing the patient to waive the privilege.

In about fifteen years more some one conceived the equally brilliant idea for equally obvious reasons, that it would be no more than fair to allow the patient's heirs to waive the privilege, so that the entire amendment now stands substantially in the following form (including in its application two other sections as to clergymen and lawyers):

"The last three sections apply to any examination of a person as a witness unless the provisions thereof are expressly waived by the person confessing, the patient or the client. But a physician or surgeon may upon a trial or examination disclose any information as to the mental or physical condition of a patient who is deceased, which he acquired in attending such patient professionally, except confidential communications and such facts as would tend to disgrace the memory of the patient when, the provisions of Sec. 834 have been expressly waived . . . by the personal representatives of the deceased patient, or (if the validity of the . . . will . . . of such . . . patient is in question), by the executor . . . named in the will, or the surviving husband, widow or any heir at law or next of kin of such deceased, or any other party in interest."

This amendment had a salutary effect in preventing the working of great hardship in many cases where a waiver of the privilege was desirable for the benefit of the patient or of his estate.

But the life insurance companies (who had suffered in some of the cases already cited and of course in many others) were not slow to adopt the plan of putting into all their printed applications a concise but complete waiver of the privilege of the statute, on behalf of the insured or his heirs and all persons claiming under them.

This gave rise to an amendment in 1899 to the effect that the waiver may only be made in open court or by agreement of counsel before trial. However, the waiver so made need not be in any particular form, but may be made by merely calling the physician as a witness and asking him the necessary questions.

It is evident, of course, by this, that it is possible to waive the statute by the conduct of the case in court.

Before calling your attention to a few cases where this has been done somewhat unintentionally, I am going to add to the statement that the statute is solely for the benefit of the patient the corollary that it is not for the protection of criminals. This has been indicated also in one or two of the cases mentioned in the first part of this paper.

It has accordingly been held that in a case where a waiver by the patient or his heirs had become impossible, a physician who had attended the patient might give evidence of facts observed by him tending to show that a crime had been committed and to which ordinarily, without such waiver, he could not be allowed to testify.

But it is no doubt true that if the patient or his heirs were accessible and capable of waiving the privilege, such waiver would have to be made, even in a criminal case, before any evidence could be introduced of any information ordinarily privileged.

The remaining cases to be cited show how the privilege of the statute may be waived at the trial by estoppel, as it were, and are therefore instructive. It will be seen from these, as from some of the cases cited under II, that, naturally enough, attempts are constantly made on behalf of the patient to get the benefit at the trial of the facts constituting the privileged information; and then by the exercise of the privilege, prevent the other side from introducing any evidence in regard to them.

About the time of the commencement of an action against a railway company for injuries sustained in an accident,[20] two physicians attended the plaintiff for the purpose of ascertaining the extent and nature of her injuries. At the trial the plaintiff called one of them as a witness (waiv-

ing the privilege of the statute as to him) and he gave important testimony tending to show that the plaintiff was affected with some spinal trouble as the result of the accident. This opinion was based mainly upon the result of the examination which he had made together with his associate on the occasion referred to. Both had attended together and made a physical examination with special reference to the existence of some disease of the spine as a result of the accident.

When the defence came to putting in their case they wanted to call the other attending physician and allow him to state his opinion. The plaintiff objected to this, but the court held that in such a case the waiver of the privilege as to one consulting physician extended to the whole consultation and the other physician might properly be called upon to state his opinion. The court in this case took occasion to state as a general rule that —

"Where a full disclosure is made with the consent of the patient, the reasons upon which the statute was founded no longer exist and every party to the transaction thus disclosed is relieved from any injunction of secrecy."

At the trial of an action against a railroad to recover damages for personal injuries received in an accident [21] the plaintiff called the physician who had attended at the time of the accident and he testified as to the nature of the injuries. It appeared that three physicians had attended the case, but all at different times, one after another. The defendant then wished to call the other two attending physicians as witnesses, but it was decided that by calling the first physician the plaintiff had only waived the privilege as to him and as to the case as it was when he saw it. But the privilege was not thereby waived as to the subsequent condition of the case and the two physicians called by the defendant could not therefore testify as to the condition of the case when they saw it.

At the trial of an action of tort for personal injuries [22] the plaintiff came on the stand and testified that the defendant shot him in the arm with a rifle and that "Dr. Venner came and put a plaster on it."

The defendant testified that he only struck the plaintiff a blow with the rifle and wished to substantiate this evidence by calling Dr. Venner to testify what his opinion was, at the time when he attended, as to the nature of the wound, claiming that the plaintiff, by his testimony, had waived the privilege, having disclosed and brought in issue the facts as to the nature of the wound. It was decided, however, that the plaintiff had not gone far enough by stating his own observation of the case to waive his privilege of preventing the attending physician from stating his opinion as to the nature of the injury.

It seems pretty evident that so far as can be judged from the records of decided cases the working of the New York law of privileged communications between physician and patient is a little hard on life and accident insurance companies.

It does not seem to have much effect now in contests over questions of testamentary capacity, as any one interested in the estate can waive it.

Nor is it of great service in itself in preventing the disclosure of matters not intimately connected with the physical or mental condition of the patient. This has arisen, however, mainly from the interpretation of the New York court as to what information shall be considered "necessary."

The defence of accident cases is of course much assisted by the amendment allowing hospital physicians and surgeons to testify, and there has also been since 1893 a provision of the code that where an action to recover damages for personal injuries is brought, or expected to be brought, and the case is a proper one for requiring the plaintiff's deposition to be taken, on the plaintiff's motion a judge may before trial order a physical examination to be made at the same time the deposition is taken. The report of the physicians or surgeons making such examination, however, must be made to the court and they cannot be allowed to testify at the trial as to any information acquired at the examination.[23]

Of course this provision cannot be used except in a very few cases, but it is mentioned here for the sake of completeness.

Under the late amendments, the privilege cannot be waived, after the death of the patient, as to confidential communications and such facts as would tend to disgrace his memory. Unfortunately this amendment has not been fully passed upon, so that it can only be conjectured in the light of previous decisions whether the court would decide that "confidential communications" were such only as related to the patient's mental or physical condition.

Before closing, I will call your attention to one more case which illustrates several of the principles already noticed.

A workman employed in a quarry was accidentally struck with a piece of iron on the left side in the region of the heart.[24] The wound was superficial, but quite severe, and he was carried to his home, where he died a week afterwards. He had been carrying an accident policy, but the company refused to pay and the widow brought an action to recover the amount of the policy. At the trial the plaintiff's attorney proved by the testimony of the widow and one or two nurses what symptoms had appeared in the case between the time of the accident and the time of the patient's death.

He then called four physicians who had never seen the case at all and asked them certain hypothetical questions, based upon the evidence which had already been given as to the condition and symptoms of the deceased. These experts all testified that in their opinion the death of the insured was the direct result of being struck by the piece of iron.

The defendant did not cross-examine them at all, but proceeded to call four other physicians and qualified them as experts.

It turned out from the preliminary questions that the last four were the family physician who had attended the case, and three others who had

been called in for assistance and consultation. To each of these, hypothetical questions were put involving the same facts as those put to the plaintiff's experts, but in the following form: "Doctor, please exclude from your mind any knowledge or information you acquired in attending this case professionally and suppose you were called to see a man suffering from a wound in his side such as has been described in this case and found also that he had something of a cough, with an occasional spitting of blood and delirium in the night time; and suppose he died in about a week, while those symptoms continued, what would you say was the cause of his death?" At this the plaintiff's counsel objected; but the court said he had disclosed all the facts himself, so that the answers of the defendant's experts would not tend to disclose any information prohibited by the statute and they might answer and the fact that they really knew something about the case *would only affect the weight of their testimony.* With this permission the defendant's experts proceeded to answer the questions and all testified that in their opinion the patient died of typhoid fever.

Since this paper was delivered an article has appeared in a journal circulated among the medical profession, calling attention to a case in another jurisdiction under a similar law, where manifest injustice was done to a physician who appeared as the defendant in a suit for malpractice. According to the principles contained in the cases above cited, it seems pretty clear that under the New York law the plaintiff in a suit for malpractice would have to prove and thereby disclose so much in regard to his physical condition as to practically waive the privilege of the statute on any matters of importance to the defendant's case.

The obvious lesson to be drawn from the working of the New York law, so far as I have been able to show it, is that any new legislation on the subject of privileged communications would have to be contained in eight or nine separate sections in order to take advantage of the points which have made the amendments to the New York law advisable. It would also be well to avoid, if possible, language giving the court such entire freedom of construction as the word "necessary," which was passed upon in most of the cases cited under III. It is not intended to make this paper controversial and perhaps an apology should be made for the remarks about the malpractice case. It is of course evident that cases of injustice will arise both with and without such a law as prevails in New York. If a new law as to privileged communications is wanted, the question is whether such a law could be framed which prevented more injustice than it caused.

It has often been said that the well-known "Statute of Frauds" did not meet this requirement, yet it is still almost everywhere in force. The fact that they are still amending the New York law, instead of repealing it, is a point in its favor. However, the main question is intended to be left open for the present, for further debate under such light as may be derived from this and other more bountiful sources.

1. Renihan *v.* Dennin, 103 N. Y. 577 (1886).
2. 11 State R., 263 (1887).
3. Grattan *v.* L. I. Co., 24 Hun. 43 (1881).
4. Henry *v.* R. R., 57 Hun. 76 (1890).
5. People *v.* Kemmler, 119 N. Y. 585 (1890).
6. Green *v.* Met. St. R'way Co., 171 N. Y. 201 (1902).
7. Accident in 1897.
8. Griffiths *v.* Met. St. R'way Co., 171 N. Y. 106 (1902).
9. Accident in 1899.
10. Burley *v.* Barnhard, 9 State Rep. 587 (1887).
11. Grattan *v.* L. I. Co., 92 N. Y. 274 (1883).
12. Re will Catherine Darragh, 52 Hun. 591 (1889).
13. Fisher *v.* Fisher, 129 N. Y. 654 (1892).
14. People *v.* Schuyler, 106 N. Y. 298 (1887).
15. De Jong *v.* R. R., 60 N. Y. Supp. 125 (1899).
16. Brown *v.* R. R., 45 Hun. 439 (1887).
17. Patten *v.* L. I. Co., 133 N. Y. 450 (1892).
18. Feeney *v.* R. R. Co., 116 N. Y. 375 (1889).
19. Nelson *v.* Oneida, 156 N. Y. 219 (1898).
20. Morris *v.* Ry. Co., 148 N. Y. 88 (1895).
21. Hope *v.* R. R., 40 Hun. 438 (1886); 110 N. Y. 643.
22. Dunckle *v.* McAllister, 74 N. Y. Supp. 902 (1902).
23. Lyon *v.* Manhattan Railway, 142 N. Y. 298 (1894).
24. Meyer *v.* Accident Co., 40 N. Y. Supp. 419 (1896).

PRIVILEGED COMMUNICATIONS TO PHYSICIANS.[1]

BY FREDERICK J. STIMSON, ESQ., DEDHAM, MASS.

IT was a matter of regret to me that an accident prevented my having the honor of speaking for my profession upon this subject at the annual meeting of The Massachusetts Medical Association; but I have now the advantage of the discussion upon it made by Dr. Cheever and Mr. Soren. I have advisedly changed the title, for the reason that "Privileged Medical Communications" seems to imply that the statutes protecting such are limited to matters medical alone, whereas, at least under some laws, such is not the case.

The papers read at the meeting, as well as the discussion in the BOSTON MEDICAL AND SURGICAL JOURNAL which preceded it, had the valuable result at least of clearing the ground. Probably in the minds of both professions, medical and law, there was considerable haze upon this subject. Many of us had a vague idea that communications *were* privileged when made to a physician in the course of his attendance. This undoubtedly arose from the fact that all judges, under the English common law system of procedure, are clothed with very considerable discretion in their conduct of examinations, particularly cross-examinations, of all witnesses. This discretion is so great that, particularly in states where there is no statute, the judges shape the law. For instance, in Massachusetts, which is among those conservative states still following the common law and rejecting codes, there is, I believe, no instance where a priest has been compelled to divulge the secrets of the confessional. Yet the priest is no more protected by any statutory provision than is the physician. This leads me to the chief of the contribution that I have to make upon the subject — that the question is really, in one of its principal aspects, hinged upon the dispute, with which we lawyers are so familiar, as to the relative advantages of *codes* — that is, statements of the law or of the common law, more or less complete, made by newly drawn-up statutory codes, which intend at least to be

[1] Read before The Massachusetts Medical Society, June 10, 1903.

exhaustive — and the "common law" system, which accepts the English common law as it is, crystallized through a thousand years of court decisions in England and this country, and rarely attempts a new statute, still less a statute which is merely expressive of the common law. The lawyers of this country are still divided on this cardinal point into two schools, and the same is true of the state legislative systems. The older states, particularly those of English origin, stick to the common law, and never attempt to define it, rarely even to improve it by statute. The newer states, especially those where the codes prepared by the late David W. Field have been seriously considered, adopt the other view. The "common law" states are Massachusetts and the New England states, Pennsylvania and the middle states except New York, and the Southern states generally, with one or two notable exceptions, such as Georgia, where they have a code which aims to be so complete as to exclude the necessity of referring to the common law at all. The Field codes of substantive law were generally adopted only in California and the far Western states following her lead, but the Field code of *procedure* was also adopted in New York, and there has been a tendency to codification in New York since. I do not propose here to go into the argument between the two schools. The obvious view of the young Western lawyer, who has not generally had a college education and lives in a town possibly remote from libraries, is that it would be convenient to find all the law in the statutes. We are told in the early lives of Abraham Lincoln that one of the two or three books that he first read and almost learned by heart was a volume of the revised statutes of Indiana — somewhat dry reading, we should think, to-day. The reply to this argument by the common law believers is that the effect of a code is to wipe out all the certainty that we have gained from past history, and to lose the benefit of the infinite number of adjudged cases where the law was decided in the absence of a statute, and where, even now, no statute could possibly be drawn which would apply. Under the common law most cases, after all, have been the subject of judicial decision. Moreover, the vagueness of the discretion left to the judge is possibly of advantage. Under the code system, nothing is certain that is not in the code. No discretion to be strict or to be lenient can possibly be allowed the judge; and until every sentence, every word, every punctuation mark, has been the subject of a court decision, we cannot be certain of what the law is.

Thus it happens that in this matter of privileged communications there has been under the common law very great discretion exercised by the judges, extending, as I have said, in the case of priests, at least, to a complete privilege, and probably in the case of physicians, to a very considerable protection. This protection is given, it is true, at the court's discretion, but is the more adjustable to the reason of each case by that very fact; and at least one thing is clear — that if we are to have a statute on the subject, that statute must necessarily be a rod of iron. It must apply to all cases equally; and nothing on the one side of the line can be allowed and nothing on the other side can be excluded. No one, for instance, contends that the privilege of physicians should be extended to cloak crime, and yet it is extremely probable that, if the statute were passed, there might be some other cases where the admission of a physician's testimony would be for the public advantage; and on the other hand, even when the privilege is extended in civil matters only, it should certainly not go so far as to prevent a physician from testifying as to the mental condition of a deceased testator in a contest over a will.

In short, I believe that the general question will be largely determined, at least by lawyers, according as they believe or do not believe in general statutory codes.

Coming now to the concrete matters. It is clear, as I have said, that the following points are fairly established: (1) The lawyer at common law has a privilege the physician and priest have not; (2) the privilege should rarely, if ever, be extended to criminal cases; (3) the privilege exists for the benefit of the patient or client, and not for that of the physician or lawyer. There are other points which are very uncertain, at least in states where they have a statute upon the subject; for example, whether the privilege extends to actual communications or also to matters of observation which fell under the notice of the physician while occupying the relation of medical adviser to the patient; whether the patient must, in fact, have employed the physician or have known that he was so employed; whether and under what circumstances the privilege may be waived.

The statutes, in so far as they have been adopted, fall also into several classes. According to the latest textbook on the subject, that of Mr. Arthur M. Taylor of New York, they have not been adopted in New England and the middle states, except New York and Pennsylvania; but the Pennsylvania statute is very moderate, applying only to civil cases; in the South they have been adopted only by North Carolina; but in the middle West they have been adopted by all the states except Illinois; in the states west of the Missouri River by all the states and territoires except New Mexico — twenty-five states and territories in all have a statute, but the tendency, even in these states, is not always consistently in favor of a professional privilege to physicians. Minnesota has recently adopted and Michigan proposed most extraordinary statutes, one providing that no physician shall, in matrimonial causes, be protected from testifying as to the existence of a sexual disease, and the other (which, however, failed for the moment to pass), providing that no one could get married without a certificate of his family physician

that he or she was free from epilepsy, consumption or sexual diseases generally, and that in no such case should the doctor have any privilege whatever. It is also important to notice that the statutes very generally apply only to licensed physicians or surgeons, though, as we know, the tendency to license persons not regular physicians — osteopathists or Christian Science people — is very largely increasing in the more radical states. Generally the privilege only applies to such information as was necessary to enable the physician or surgeon to act in his professional capacity. Such is the New York statute; but a court of Pennsylvania, notwithstanding its statute did not go nearly so far as that of New York, made a very sensible decision that matters outside such professional information, when confided to the doctor by the patient, especially in answer to the doctor's questions, were also privileged — a most excellent example, by the way, of the advantage of the common law over the code: the Pennsylvania court, having no code law upon this point, could make such a decision, while a New York court could not. Generally the statute reads that a physician shall not *be allowed* to disclose such information, but in some states it is only that he shall not be compelled, and in most states, as I have said before, it may be waived, not by the physician, but by the patient or party to the suit. The restriction of the privilege to civil cases exists in only a few states having the statute. In my opinion the wisest law of all is that of North Carolina, which, while creating the privilege, says that the presiding judge may compel disclosure of knowledge professionally obtained, etc., if in his opinion the same is necessary to a proper administration of justice. Practically, this is the common law.

The relation of physician and patient must, of course, exist. The mere fact that a man is a physician confers no privilege, but it is usually immaterial whether the physician was called or employed by the patient or by some one else. A physician who goes really to get evidence, not employed by the patient, although he may give some professional treatment, commonly acquires no privilege, especially when the physician is wholly paid by a third party. One physician may, however, call in another and impart to him the privilege. In Ohio, Indiana and in other states the statute extends to all matters observed by the physician, although not confided to him by the patient or not necessarily matters relating to the treatment. For instance, in Arkansas, where an unmarried woman told her physician that the father of her child had not promised to marry her, the communication was not held to be privileged, as it had nothing to do with her professional treatment. This rule is usually in opposition to the statute contended for by Dr. Cheever, which protects only the disclosure of any matters tending to cast disgrace upon the person treated. A physician was not required, in Missouri, to state that his patient was drunk when he called upon him for professional services. In no case is there any privilege in suits by the patient against the physician for malpractice.

Let us now consider the usual cases in which the question of the physician's privilege arises. These are: (1) Criminal cases where the patient is the criminal; (2) criminal cases where the patient is not the criminal but the person injured; (3) actions for damages for personal injuries by the patient; (4) will contests; (5) actions by the beneficiary of insurance policies; (6) suits between physician and patient. Let us leave the question of statute or common law, but consider, broadly stated and in popular language, how we should like the law to be in each of these classes of cases.

(1) Criminal cases where the patient is the criminal. I can see no reason, nor do I believe that the medical profession will differ from me, to use the physician's privilege to protect crime. We all recognize the ethical duty of the physician not to tell. No one claims that he should run to the nearest police officer; but these considerations are matters of professional honor and there they may well be left. When the patient, long after he is well, is actually apprehended and brought into court on a charge of murder, or even assault, it is clear that the highest interests of the state require that the physician's knowledge should not be used to cloak the crime. Certainly that is true in cases of murder, but in the lighter cases — take the example of assault and battery — it is pretty clear that a man who is seriously injured will not risk his life by failing to consult a physician when the punishment for the crime itself is so slight. And for the extreme example, does any one claim that the doctor who set the leg of John Wilkes Booth, after the murder of Abraham Lincoln, should have been prohibited from testifying to the facts? Was he not in fact sentenced for life because he did not reveal the fact?

(2) Criminal cases where the patient is not the criminal, but the person injured. In this case there seems no reason whatever why the physician's testimony should not be required.

(3) Actions for damages for personal injuries by the patient. This is perhaps the only case subject to any doubt, but after all, why should the patient be protected? If his injury is really trivial and the person injured intends to maintain a fraudulent claim for large damages, there does not seem much injustice in the end in making him go to a physician at his own risk. Moreover, it is always to be remembered that it is difficult for him to refuse seeing a physician sent by the defendant. If, on the other hand, the person is seriously injured he will certainly go to a physician and that physician will certainly testify to his benefit. In fact, experience shows that physicians, perhaps properly, are more than ready to testify on their patient's side of the case.

(4) Will contests. In this case it is perfectly clear that there should be no privilege. To begin with, the patient is dead. Even in New

York there has been a desire and an attempt by the courts to alter the law in this particular, so that a physician may only not be required to testify, after the decease of his patient, to anything bringing disgrace upon him or his family. But the matters which result in the annulment of wills are not usually those which bring disgrace upon the patient or his family, except where that disgrace is richly deserved. Wills are rarely affected by the physical condition of the patient. They are either affected by outside conditions or by the patient's mental condition, which is surely proper matter of evidence.

(5) Actions by the beneficiaries of insurance policies. All life insurance companies now require the applicant for a policy to see their own physician, but under the New York statute even he is prohibited from testifying. There might be some reason for this on the ground of estoppel: if he allows the applicant to get a policy, he could logically be prevented from saying that he ought not to have had a policy; but as a matter of fact, it is well known that the New York statute, in effect, works a fraud upon life insurance companies, and if the family physician knows that the policy holder is subject to an incurable disease and, notwithstanding, he gets a life policy by concealment of that fact, under what ethical principle is the physician not to testify after his death, thus making a fraud effectual?

(6) Suits between physician and patient. Under the common law there is no privilege in suits for malpractice, while suits by a physician for his fee are somewhat rare in the higher orders of the profession. Certainly it is not for the interest of the physician, at least, to have the privilege maintained in this latter case.

Finally, there is a great class of cases, likely more and more to get into the courts, in matters of marriage, divorce or sometimes wills, where the physical condition and the just or temperate life of some person is concerned. I have not made a definite class of these, for the reason that they might come in almost any of the divisions above set forth. Probably we all know cases where the testimony of the physician has been of great importance, as in matters of justifiable breach of promise. Those wishing to go into the subject may refer to a very able article by Professor Huberich of the University of Texas, in a recent number of the *Harvard Law Review*. But these are all peculiar cases where the discretion of the judge, acting under the wise liberality of the common law, may be relied upon to protect both the patient and the physician. No statute can be drawn which may be safely applied to such delicate matters short of the absolute exclusion of all testimony by physicans in all cases. I have said enough to show that in my opinion this, at least, is unwise.

My own conclusion is, therefore, both that in most cases the common law stands right, and that it is wiser in all to leave the whole matter to the common law. A significant argument for this is shown in the very fact that Mr. Soren has found it necessary to fill some twenty pages with an account of cases where it has been necessary for the supreme tribunal of New York to decide what the statute meant. All these are the consequences of the adoption of a statute. During the same period very few such cases have troubled the courts of Massachusetts and the courts of New England, for under the common law the rule is in most cases clear. And there has recently been a distinct check to the tendency to adopt statutes upon this subject. I find that, while some twenty or twenty-five states copied, as they usually do, the statute of New York when it was adopted, since 1891 there has been no statute in any state of the United States except the very reasonable one already mentioned in Pennsylvania, and an extraordinary statute in Iowa which absolutely prohibits physicians from disclosing any communications given in professional confidence, and which applies as well to stenographers or confidential clerks. Indeed it may be doubted whether the reasons for such a statute do not apply as well to the case, for instance, of a confidential clerk or a trustee as of a physician.

The reason of the privilege given the lawyer rests on quite a different basis. One goes to him for the express purpose of being defended in the courts. We all know that the ethical position of the lawyer defending a person known to him to be a criminal has been a commonplace of debate for centuries. Nevertheless, it is generally accepted now, if only on the broad ground that it is by no means easy always to tell whether a man is a criminal or not, and that, even if he be a criminal, he is entitled to counsel, if only for the purpose of determining the degree or grade of his offence. This, therefore, is a mere rule of the game in the courts. But a criminal does not, in the ordinary course of events, have to go to a physician; and in ninety-nine cases out of a hundred what the physician testifies to is of momentous consequence, civil and criminal, and often no other person can be conversant with the facts.

If any statute is adopted I should recommend a combination of the laws of Pennsylvania and North Carolina; that is, adopt the Pennsylvania principle that the privilege extends only to civil cases, and this with the exception of the competency of persons making a will, and the very luminous phraseology of the North Carolina statute, which substantially states the common law, that is, it allows the judge to determine when the communication by physicians of knowledge acquired while attending the patient is necessary for a proper administration of justice.

Many legal abuses have grown up and many bad decisions have been rendered in this country, I regret to say, from the plain ignorance, that is, the absence of historical legal education on the part of the judges. Notably this has been true in the great human interests affecting labor and capital, and those recent combinations commonly known as trusts. Two great evils — the election of ignorant judges and the clothing

of petty courts with high chancery powers — have largely been responsible for the abuse known as government by injunction and the objectionable powers of trusts; and it is more than probable that, in matters of evidence, many judges have rudely compelled the disclosure of professional secrets which in no sense really pertain to the necessary administration of justice. This is, indeed, one of the arguments for the code, that it brings to the notice even of an unlettered judge more principles of the common law than he might otherwise be familiar with; but for Massachusetts, at least in this matter of privileged communications, I should prefer to rest, as we do now, upon the definiteness and the elasticity of the common law, the good sense of the judges and the honor of the medical profession.

Clinical Department.

ECHINOCOCCUS CYSTS OF THE LIVER AND LUNGS.

BY ARTHUR K. STONE, M.D., BOSTON.

THE following case was brought to Medical Room of the Out-patient Department of the Massachusetts General Hospital, and from thence it was transferred to the service of Dr. Chas. B. Porter, who immediately operated. The patient lived four days. The important portions of the various records are appended.

The patient was an Armenian who had come to the United States seven years before, during which time he had lived and worked in Milford, Mass. So far as could be ascertained, he had always considered himself well until ten weeks before his coming to the hospital. Dr. Gaiolzakyan, who accompanied the patient, when asked about the habits of the Armenian peasants, stated that hydatid disease was not common in Armenia nor was there any special opportunity for exposure for the people living in the Armenian villages.

For ten weeks there had been progressive loss of strength and weight, accompanied by pain in the epigastric region. Two weeks after the appearance of the symptoms they had become so severe that the patient had been obliged to stop work. When the presence of a tumor was first noticed could not be ascertained. The ordinary symptoms of fever had been present, but no chill. In the past three weeks the epigastric pain had been very severe and the weakness and emaciation had progressed rapidly. Throughout the sickness there had been no symptoms of dyspepsia and no vomiting. The bowels had moved without difficulty and on the day before there had appeared a tendency to diarrhea. The patient was much exhausted by his efforts in coming to the hospital.

Physical examination showed a well-developed man, much emaciated, pale, and sweating profusely. His tongue was dry and coated. There were no glandular enlargements visible. The sclera showed a very slight yellowish tinge. The temperature was 96° F. A stained preparation of the blood showed no marked leucocytosis. A blood count some hours later gave 1,600 whites. The urine was high in color, acid, 1,025. Albumin present, 1-10 to 1-8%. Bile was present in small amount. The sediment showed numerous brown granular casts, also a few normal blood globules. The sounds were weak, but otherwise the heart was practically normal, as also appeared to be the left lung.

The lower portion of the right chest was bulging. There was flatness from the fourth rib in front to four fingers' breadths below the costal margin. Below the fourth interspace in front and the mid-scapular in the back there was absence of fremitus and respiratory murmur. Below the ribs, extending nearly to the median line, was a convex bulging tumor. On inspiration there was a palpable crepitus, and a loud friction rub was to be heard over the outer portion of the tumor. Over the convexity of the mass there was a doubtful sense of fluctuation. The edge of the liver and the whole surface of the mass presenting below the ribs felt smooth and hard. The diaphragm phenomenon was absent on the right side, but well marked on the left.

The abdomen was otherwise normal, there being no sign of ascites, so that the lower portion appeared flat and depressed as compared to the upper portion. In spite of the fact that he was an Armenian, the spleen was not palpable.

The examination of the right back showed dullness beginning at two inches below the spine of the scapular, quickly becoming flat. Respiration and fremitus were diminished and lost below the angle of the scapular. Above the dullness the respiration was harsh but of diminished intensity. Signs in the left side of the back were practically normal.

With the left hand at the back, pressure over the tumor was transmitted through to the under hand, also a faint feeling of trembling as of an over-distended cyst. It was evident that we had to do with a greatly enlarged liver and with a tumor of its anterior surface.

The cause evidently had begun to obstruct the outflow of bile, as shown by the slight jaundice. There were evidences of perihepatitis and probable peritonitis present, but they were evidently secondary in character and of recent origin. Cancer was hardly to be considered, from the absence of all symptoms of indigestion and the rapidity of the development. Primary abscess of the liver could not be eliminated, but was made improbable from the absence of history pointing to intestinal infection. Hydatid disease could not be eliminated but did not seem probable from the history. This left the rare cystic disease of the liver, against which nothing could be urged but its rarity. There were, of course, evidences of secondary imflammatory process present.

Immediate operation was deemed advisable, and Dr. C. B. Porter operated, making an incision through the abdominal wall over the most prom-

inent portion of the tumor and parallel to the costal margin. A small amount of bloody fluid was found in the cavity, which proved sterile on culture. The tumor presenting in the wound consisted entirely of the enlarged liver, which appeared dark and distended and softer than normal. On the second attempt, the aspirating needle found purulent material at a depth of about two inches. The cavity thus found was quickly opened by knife and dilators. The contents of the cavity gushed out, showing the pressure under which they had been retained. The amount of the escaping material, blood, pus and gelatinous material was estimated at about four quarts. In the escaping fluid were innumerable cysts from the size of a pea to those two inches in diameter. As the hemorrhage was excessive, the cavity had to be packed with gauze after cleansing as thoroughly as possible.

The patient, though in poor condition after the operation, made a good recovery from the ether.

The following day the patient felt much better than before the operation, and the ooze from the wound, which at first was considerable, stopped. Early on the second day after the operation the patient suddenly became delirious, pulse 150; temperature 104.5°. Abdomen was flat; there was a large movement following the administration of calomel. There was flatness and friction sounds to be heard at the base of the chest on the right side. No signs of consolidation, however, developed and the general condition somewhat improved. The wound continued in good condition and there was no distention of the intestines. At noon, the fourth day after the operation, the patient's condition suddenly changed for the worse and death followed.

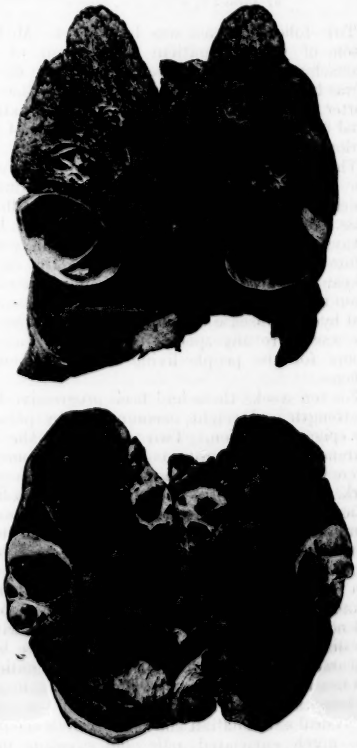
ABSTRACT OF AUTOPSY RECORDS, CLINICO-PATHOLOGICAL LABORATORY, MASSACHUSETTS GENERAL HOSPITAL.

Autopsy No. 981, Dec. 13, 1902.

The liver is of about normal size, and in the right lobe there is a large, irregular-shaped cavity probably 15 cm. in diameter. This cavity, for the most part, has a rough, irregular lining composed chiefly of a patchy layer 2 or 3 mm. thick, of dirty greenish gray, somewhat friable, finely granular material. Adherent to this in places are plaques and patches of a dense but friable dirty grayish, opaque, tough substance. The plaques of this substance are 2 or 3 mm. in thickness and are not easily removed from the lining of the cavity. In places the lining of the cavity resembles the mucous membrane of the gall ducts and presents the appearances of being formed by the walls of greatly distended gall ducts more or less reddish discolored. In fact, a close examination and dissection shows that these portions of the lining resembling distended gall ducts are undoubtedly continuous with the hepatic duct of the liver. This was followed below the opening of the cystic duct and found to be apparently of wider circumference than normal. The cavity of the liver lies in immediate relationship with the diaphragm and the diaphragm is adherent to the liver and forms probably a part of the wall of the cavity superiorly. The lining of the cavity seems to be separated from the liver substance by a thin layer of connective tissue. In the superior wall of the cavity and in the midst of a considerable amount of what appears to be inflammatory tissue adherent to the surface of the liver are two abscesses filled with white, thick pus, the largest about 12 mm. in diameter. In the neighboring liver tissue several much smaller abscesses are apparent. The liver not extensively cut up, in order to preserve the specimen for teaching purposes. Portions of the wall of the cavity, including adjacent liver substance, preserved for microscopical examination.

Lungs.— In each lung there are cystic structures in the midst of the pulmonary tissue and bulging outwardly beneath the pleura. Where they bulge the most, these cystic structures have a grayish, translucent wall, apparently formed of little more than the pleura. The dimensions of these cystic structures and their situations are as follows:

Right Lung. — Median lobe. Cystic structures 3 cm. in diameter. In the inferior lobe of



LUNGS FROM THE CASE OF ECHINOCOCCUS CYSTS OF THE LIVER AND LUNGS. (Photographs by Dr. A. H. Gould.)

the right lung a large cystic structure 7 cm. in diameter. In the superior lobe of the left lung a cystic structure about 4½ cm. in diameter. In the neighborhood of these a collapsed cystic structure probably 3 cm. in diameter. In the inferior lobe of the left lung another apparently multilocular cystic structure probably 3 cm. in diameter. In the inferior lobe of the left lung another apparently multilocular cystic structure about 6 cm. in diameter. At the base of the same lung, not bulging to the pleural surface, are two cysts, 1½ and 1 cm. respectively in diameter. These are filled with a clear fluid and possess a white gelatinous lining in the form of a layer about 1 mm. thick. This is readily removable, leaving a smooth surface beneath, apparently formed by a thin layer of connective tissue. No evidence of pneumonia or acute pleurisy. Lungs preserved in formalin for further examination.

BACTERIOLOGICAL REPORT.

Coverglass from the purulent material in the liver shows no bacteria.

MICROSCOPICAL EXAMINATION.

Sections of the wall of cysts in lung show the kitinous layer with brood capsules containing scolices adherent.

Sections of liver bordering upon the cystic cavity show chronic inflammatory changes. In one section foci of necrotic material are present.

Spleen. — An area of necrosis in the section, which area probably corresponds to a suspected infarct.

ANATOMICAL DIAGNOSIS.

Evacuated echinococcus cyst of the liver. Small abscesses of the liver. Echinococcus cysts of the lungs.

There have been four other cases of echinococcus cyst operated upon at the hospital since 1890. Three of these have been men and one a woman. Strangely enough, one of these patients was an Armenian, who had lived in this country for six or seven years. Thus two out of five cases have developed in a people who make up a very small portion of the community. Another patient was a Russian Jew; a third was an American sailor who had, however, never been in Iceland, but had "always had a dog on board." The woman alone was a native of Iceland and had had symptoms of pain in the side seven years before her coming to the hospital, and five years previously she had had a cyst of the liver opened.

Of diagnostic symptoms there was little to be gained from the histories. Pain in two cases came on only within six weeks of the time of operation. In one there was marked nausea lasting for six weeks and in two cases the symptoms developed suddenly, one as the result of acute inflammatory processes and the other brought on by a blow which ruptured the cyst, which had apparently given no previous symptoms. In one case the tumor, which was sub-hepatic, had been noticed for thirteen months. In the woman's case the pain had developed three years after the first operation. The pain had started at the border of the ribs and radiated upwards towards the axilla and would often last for half an hour at a time. Indigestion, nausea and vomiting were not complained of.

Four of the five cases here mentioned recovered from their operations. These cases are therefore of interest in that two of them occurred in Armenians, a people of whose susceptibility to echinococcus infection we have no statistics. In four of the cases pain was the first most pronounced symptom which attracted attention. In the case given above in detail the extent of the lesions in both lungs, which gave rise to no symptoms, together with the large cyst in the liver, makes the case quite unusual.

Reports of Societies.

SURGICAL SECTION OF THE AMERICAN MEDICAL ASSOCIATION.

NEW ORLEANS, LA., MAY 5 TO 8, 1903.

(Concluded from No. 9, page 242.)

THIRD DAY (*Concluded*).

DR. HENRY A. CHRISTIAN, Boston, reported a case of

EPITHELIOMA OF THE CAULIFLOWER TYPE OF THE BACK OF THE HAND,

which examination previous to the beginning of treatment had proved to be a true example of this condition. Serial examinations during the progress of degeneration showed that the cells died, were surrounded by granular cells and were destroyed. During the operation a portion of the hand which had been supposed to be non-carcinomatous was protected by a lead sheet and this afterwards became infected. During the process no polymorphic nuclear leucocytes were present and he did not look upon the process as one of fatty degeneration.

DR. EDWARD H. NICHOLS, Boston, stated that he believed many cases of epithelioma were reported as cured, when in reality it was simply a healing over of the skin surface. The action of the x-ray, he believed, was that of a mild irritant, thus producing increase in the epithelial cells and later disintegration. He also referred to the fact that the x-ray will produce epithelioma, a case being reported of an operator in Boston who lost three fingers from one hand and two from the other. Operative treatment was recommended in all cases where possible, and in some cases it was thought secondary treatment by the x-ray would be beneficial.

DR. FRED B. LUND, Boston, reported several cases of epithelioma of the face of the rodent ulcer type, which had been benefited by the x-ray treatment, and in the cases in which recurrence had occurred there had usually been glandular involvement. In a case of recurrent carcinoma of the breast he had removed the

growth several times under local anesthesia and the patient was finally subjected to the x-ray treatment without any apparent result, and the opinion was expressed that it had very little effect upon malignant growths.

DR. JOHN W. BRANDAU, Clarksville, Tenn., reported two cases of cancer of the cervix treated by the x-ray, in which the pain disappeared and the growth underwent rapid degeneration.

DR. WILLARD, in closing, stated that he believed a blue medium would increase the quantity of the ultra-violet rays and thus be of benefit in the x-ray treatment of tubercular joints. He believed that the sunlight, Finsen light and x-ray would have to be used for at least five years before any definite conclusions could be reached, and recommended mechanical fixation of the joint in addition to the treatment by the other methods. He also believed that bringing the patients out of the darkness and giving them good food had much to do with their improvement.

DR. STEWART, in closing, stated that he did not think leucocytosis was a very important factor in the degeneration of the epithelioma, and reported two other cases in which this did not occur, but the occurrence of vascularization he thought was singular. He reported a case of tuberculosis of the shoulder joint, in which, during the first two months of treatment by the x-ray, very little result was obtained, but in from eighteen to twenty-four months good influence over the tubercular process was obtained.

DR. JOHN E. SUMMERS, JR., Omaha, Neb., read a paper entitled

VARIX OF THE INFERIOR MESENTERIC VEIN, COMPLICATED BY CHRONIC ULCERATIVE COLITIS; OPERATION.

In the case reported there was a chronic ulceration of the rectum and sigmoid flexure of the colon, accompanied by the usual clinical signs and demonstrated by ocular inspection, which he was not able to state positively was the effect or cause of the varix of the inferior mesenteric, but believed it to be the latter.

DR. CHARLES A. POWERS of Denver read a paper on

CONGENITAL DISLOCATION OF THE RADIUS.

The patient was a boy of thirteen years, in whom the left upper extremity had been from birth materially shorter than its fellow, the bones of the forearm being fixed in extreme pronation with inability to supinate. The elongated left radius was dislocated upward, forward and outward, lying on the outer and anterior aspect of the humerus. Photographs and x-ray pictures showed the condition.

DR. JOHN P. LORD, Omaha, Neb., read a paper entitled

ACUTE EPIPHYSISITIS OF THE HEAD OF THE FEMUR, CAUSING A CONDITION SUBSEQUENTLY SIMULATING CONGENITAL MISPLACEMENT,

in which he reported the case of a child who had an abscess over the hip at the age of sixteen months, up to which time he was supposed to be normal. As a differential factor in the diagnosis of these conditions he mentioned the fact that in the congenital deformity the head of the femur is against the ilium, while in the pathological condition it is far removed from the pelvis.

DR. WISNER R. TOWNSEND, New York, felt that the most important point was to keep the thigh abducted and prevent irritation, and recommended that the thigh be placed in a plaster of Paris bandage instead of a leather support or splints.

THIRD DAY — AFTERNOON SESSION.

DR. H. EARLES, Milwaukee, Wis., read a paper entitled

NECESSITY FOR MORE CARE IN THE TREATMENT OF SKULL FRACTURES,

which he summed up as follows:

(1) Fractures of the skull are not always recognized as such until too late. (2) When not properly treated at or about the time of fracture, they frequently result in death, and if not in death, in serious remote consequences. (3) When properly treated they usually terminate satisfactorily, and with ordinary care and cleanliness fractures of the skull may be successfully treated by the average surgeon and under ordinary conditions.

DR. SULLIVAN, Chicago, recommended operation in all cases of compound fracture of the skull, and that simple fractures should be kept under observation and operation performed so soon as motor symptoms developed. If sepsis occurs a median incision should be made and drainage established.

DR. B. B. DAVIS, Omaha, Neb., referred to the fact that very often there were extensive injuries to the substance of the brain with very little injury to the bone, and he believed the two things to be considered in deciding whether or not to do an operation were (1): Is there any danger if we do not do the operation? and (2) Are we going to leave the patient in a bad condition if we do it? The operation should not be done unless absolutely necessary, as cicatricial tissue is liable to form and cause subsequent trouble.

DR. JAMES B. BULLITT, Louisville, Ky., read a paper entitled

EPISPADIAS; REPORT OF A CASE TREATED BY A MODIFICATION OF CANTWELL'S METHOD,

in which he stated that, while he believed the operation as described by Cantwell in 1898 to be an almost ideal operation, he felt that the transplantation of the newly-formed urethra beneath the penis in its normal position was an improvement and had employed this modification in his case. With the exception of a small fistula about the size of a pinhead, the wound healed and the patient was able to retain his urine for several hours.

DR. RUDOLPH MATAS, New Orleans, La., read a paper entitled

CICATRICIAL ANCHYLOSIS OF THE JAWS; A CONTRIBUTION TO ITS OPERATIVE TREATMENT.

The teeth were horizontal to the jaw, and they would not open to a sufficient extent to admit the blade of a knife, the patient being compelled to live entirely on broths and milk. The cicatricial tissue was first removed and then two bilateral flaps of the skin turned in to take the place of the mucous membrane. Very satisfactory results were obtained by this method, and the patient improved considerably.

DR. J. B. MURPHY, Chicago, reported two cases, in the first of which, after the incision through the fibrous growth and the removal of the mass, a flap was turned down on the neck, the cutaneous surface being on the inside, and a good recovery ensued without much disfigurement. The second case followed the removal of a large angioma, the teeth standing at an angle with the side of the mouth, and after doing the same operation a fairly movable jaw was secured.

DR. ARTHUR DEAN BEVAN, Chicago, read a paper entitled

FURTHER CONTRIBUTION TO THE SURGERY OF THE UNDESCENDED TESTICLE,

in which he expressed the belief that this condition occurred much more frequently than was generally supposed, and called attention to the following possible dangers of leaving the undescended testicle in its original position: (1) Hernia; (2) traumatism; (3) gangrene through twisting of the cord; (4) inflammation of the misplaced testicle; (5) malignant disease.

DR. J. B. MURPHY, Chicago, read a paper entitled

SURGERY OF THE URINARY TRACT IN THE FEMALE, EXPERIMENTAL AND CLINICAL,

in which he dwelt particularly upon the conditions of pyelonephritis, hydronephrosis and pyonephrosis. In all cases of infection of the kidney he recommended removal of the capsule and division of the kidney. He directed attention to the fact that with two healthy kidneys there was about four times the necessary renal secreting surface, and recommended the removal of the kidney in a secondary operation if the primary operation did not relieve the infection. He laid particular stress on the necessity, in operations on the pelvis, of making a large incision and bringing out the kidney, in order that you could better see to work, and directed attention to an incision through the bladder which he had found valuable, as the wound heals very quickly and it is a convenient route.

DR. ARCHIBALD MCLAREN, St. Paul, Minn., felt that the operation suggested by Dr. Murphy was very valuable in pyelonephritis. He stated that in several cases upon which he had operated for stone in the kidney, where he was sure perfect aseptic conditions prevailed, the operation was followed by a curious diphtheritic inflammation of the pelvis, which later necessitated the removal of the kidney.

DR. GEORGE GOODHUE, Dayton, Ohio, thought that if we were able to ascertain that the patient had one healthy kidney, by means of segregation it was better to remove the kidney than to subject the patient to repeated operations, with the consequent dangers of anesthetics and emboli.

DR. ALBERT M. TAGERT, Chicago, reported a case of movable kidney upon which he had operated one week after labor, the patient at that time having a temperature of 102° to 104°. There was very little secretion of the urine, and trouble with the other kidney was suspected. Everything went well for two weeks, when the nurse reported that she could not wash it out through the bladder. Upon introduction of the catheter he succeeded in opening the ureter, and the temperature fell to normal in five or six hours.

DR. RUDOLPH MATAS, New Orleans, stated that he believed there was no field of surgery in which conservatism was of more value than in the surgery of the kidney. He felt that in any infection of the kidney personal equation and the capacity of the operator must always be taken into consideration, and that when one has not had very much experience it may be better to remove the kidney at the primary operation.

DR. J. B. MURPHY, Chicago, in closing, recommended drainage through the cortex in connection with the operation for removal of a portion of the kidney or in an operation for stone in the kidney. The advantages of drainage as a primary operation instead of doing a nephrectomy are not that it is easier, but because a primary nephrectomy done according to Kister produces a mortality of from 23% to 50%, according to the conditions preceding operation, while with a secondary nephrectomy following drainage the mortality is almost nothing.

DR. A. H. LEVINGS, Milwaukee, Wis., read a paper entitled

TUBERCULOSIS OF THE MAMMARY GLAND,

in which he stated that the condition was almost exclusively confined to women, usually occurring between the ages of twenty and thirty-five years, during the activity of the gland. Nearly one-half of the women affected with the condition have borne children; it frequently occurs during pregnancy, and is superinduced by a weakened, anemic state. It does not appear to be dependent upon the pre-existence of the disease in any other portion of the body, and if it is secondary to a tubercular process elsewhere, the focus may be situated in the lungs, skin or some distant part of the body, the route of the infection being in many instances through the lungs. The differential diagnosis between this condition and carcinoma is not always easy, and prompt operative treatment should be instituted.

DR. B. B. DAVIS, Omaha, Neb., reported a case occurring in a young woman about thirty years of age, in which there was considerable involvement of the axillary glands with perfora-

tion and fistula, there being a history of a discharge containing tubercle bacilli.

DR. ANDREW WADE MORTON, of California, stated that he had recently made the diagnosis by the injection of tuberculin, with subsequent confirmation by pathological examination.

DR. A. H. LEVINGS, in closing, stated that he believed the reason so few cases of tuberculosis of the mammary glands were reported was because the condition was diagnosed as carcinoma. In regard to the treatment by curetting, he felt that the infection was confined chiefly to the pyogenic membrane, and if this could be eradicated one would get rid of the infection.

FOURTH DAY — MORNING SESSION.

DR. LUTHER SEXTON, New Orleans, read a paper on the

TREATMENT OF FRACTURES OF THE FEMUR IN PLASTER OF PARIS CASTS,

in which he called attention to the difficulty of approximating the fragments of the bone and retaining them in proper apposition, the greatest difficulty being to prevent shortening and displacement. He believed that plaster of Paris bandages were preferable to the side splint for this purpose, and described the technique in detail, laying stress upon the necessity for bringing the plaster of Paris high up around the pelvis. The method is cleanly, the bandage cannot get out of place, and good results will follow its perfect application.

DR. JOHN P. LORD, Omaha, Neb., while he did not think that all fractures of the femur should be treated by this method, particularly those below the trochanter, felt that it was particularly applicable for the treatment of intracapsular fractures, extension being used in addition to the plaster, if necessary, the most important point being to get the fragments of the bone in proper apposition and then maintain them there by proper dressing.

DR. ALBERT E. GRANT, Denver, Col., referred to the remarks of Dr. Allis in regard to the difficulty of maintaining correct apposition of the parts, and the necessity for cutting down the ends, and the consequent suggestion of Dr. Lane of the cutting down and wiring of the fragments, and stated that he had found this practice of value in fractures of the elbow joint. The best results, he believed, would be obtained by applying both some method of extension and a fixed apparatus around the limb. He did not think that the plaster should be applied until three or four days after the injury, when all inflammation had subsided, and recommended that the silicate of potash be employed in lieu of the plaster, as it is very light, the only disadvantage being that it requires more time to harden.

DR. ANDREWS of Mahnhata, felt that much better results would be secured from the use of the plaster of Paris dressing than from complicated body splints, and believed that it should be applied after the inflammation had subsided.

DR. SEXTON, in closing the discussion, exhibited one of his patients, who was an engineer, who, in jumping from his engine in order to avoid a collision, sustained a backward dislocation of the knee joint and fracture of the femur, the latter being treated by plaster of Paris without the application of any extension. He has now entirely recovered, the slight limp in his walk being due to the anchylosis in the knee joint resulting from the dislocation, the accident having happened slightly over six weeks ago. The liquid glass, as suggested by Dr. Grant, he did not think would be applicable in a hot climate, and he did not consider that the patient should, under any circumstances, be allowed to walk around. The fragments of the bone should be held in position by an assistant during the application of the plaster.

DR. MILES F. PORTER, Fort Wayne, Ind., read a paper entitled

THE CLOSURE OF WOUNDS,

in which he stated that he believed adhesive plaster to be the best substitute for stitches, and recommended its employment for operations about the face in order to avoid scars, particularly in hare-lip operations.

DR. JOHN L. SUMMERS, JR., Omaha, Neb., thought that adhesive plaster answered the purpose admirably for superficial wounds, but for deep wounds, and especially in abdominal surgery, he felt that sutures should be employed in addition to the plaster.

DR. ANDREW WADE MORTON recommended the use of this method for the closure of superficial wounds, believing it to be superior to suturing, as in this manner one would avoid pressure and the consequent tissue necrosis, but if applied in deep wounds, he believed it would simply close the outside and leave dead spaces, and this would be particularly true if employed in abdominal wounds.

DR. MILES F. PORTER stated that he did not recommend the use of adhesive plaster to replace the use of sutures in abdominal surgery, nor that it could be used in any other operation where tension existed. In regard to the moisture that might occur beneath the plaster, he felt that that would be absorbed by the skin without doing any injury. In order to avoid the difficulty in taking off the strips of plaster, he recommended that about a quarter of an inch be turned up on each end of the strip at the time of its application, thus enabling you to catch hold of it to pull it off.

DR. T. C. WITHERSPOON, St. Louis, Mo., read a paper entitled

OPERATIVE TREATMENT OF EXOPHTHALMIC GOITER,

in which he reported nine cases, in three of which he had done the operation under chloroform, the remaining six being done under a local anesthetic, and stated that he believed a $\frac{1}{10}$ to a $\frac{1}{8}\%$ solution of eucaine to be the best for

that purpose, and there should also be infiltration of the tissues below the skin. He recommended that the incision be made parallel to the sternocleido-mastoid muscle, the arteries being ligated as suggested by Wolfe and Kocher. The injection method was condemned and the time for operation must be derived from the history of the case.

DR. ALFRED E. GRANT, Denver, emphasized the importance of as speedy work as possible in these operations. He recommended that the incision be made through the skin, the arteries ligated and the capsule opened. Hemorrhage is exceedingly dangerous in these patients, owing to their usual weakened condition.

DR. EMMET RIXFORD, San Francisco, Cal., divided the condition into two classes, primary and secondary, the latter being that stage in which the symptoms supervene in the presence of an existing goiter, and the prognosis is much better in this latter class of cases. The chief danger is from the anesthetic, and local infiltration is better than general anesthesia, the sight of the instrument, etc., being kept from the patient by a cloth around the neck supported by weights. The transverse incision is to be preferred where the tumor is not too large, as the cosmetic effect is much better.

DR. J. SHELTON HORSLEY referred to the doubtful etiology of the condition, and expressed a doubt as to whether the excess of thyroid secretion was the result or the cause of the exophthalmic goiter; the treatment, if the first theory is correct, would vary materially from what it would if the last is the correct one. He reported a case in which he had done the unilateral Venesco operation, followed by marked improvement. He advanced the theory that possibly the good results produced by operation might be owing to the fact that any interference with nerves in the neck would give temporary relief similar to that observed in some cases of epilepsy.

DR. T. C. WITHERSPOON, in closing, laid particular emphasis on the importance of ligation of the arteries and the employment of a local anesthetic.

DR. F. G. CONNELL, Leadville, Colo., read a paper entitled

SUBCUTANEOUS INJECTIONS OF PARAFFIN FOR DEFORMITIES OF THE NOSE,

in which he stated that the method was chiefly of value for the treatment of saddleback noses. He gave a *résumé* of the literature on the subject, and recommended that the injections be of small amounts at different intervals rather than a large amount at one time.

DR. ANDREW WADE MORTON, California, stated that he had used this method in twenty-five cases during the past three years, bringing the melting-point up to 109° by the use of sperm oil, it having been proven that it is necessary to have the paraffin above the temperature of the blood or it will not support the deformity.

DR. WILLIAM J. MAYO, Rochester, Minn., stated that the three principal methods for the remedy of saddleback noses had been: (1) Flap carrying; (2) celluloid bridge, which after a time is liable to produce tissue necrosis, requiring its removal; and (3) paraffin injections, the last method being preferable to the others because it is more quickly done and produces a better and more permanent result.

DR. WALTER M. SPEAR, Rockland, Me., read a paper entitled

ABSCESS OF THE SPLEEN,

in which he gave a *résumé* of the literature on the subject and reported a case resulting fatally. If the diagnosis is made early and splenectomy performed, the prognosis is fairly good.

DR. E. J. MELLISH, El Paso, Tex., read a paper entitled

ANESTHESIA,

in which he stated: (1) That no anesthetic could be employed exclusively in all cases; (2) the best technique of preparation and administration and general management should be carried out; (3) it should be administered by a successful anesthetizer. He divided the cases into three classes: (1) Cases in which the indications for local anesthetic are absolute; (2) cases in which the indications for general anesthetic are absolute; (3) doubtful cases, in which a general anesthetic should be employed. The mere fact that an operation can be done under local anesthesia, he felt, is not sufficient to justify its employment.

DR. A. J. OSCHNER, Chicago, believed that with the conditions as they exist at present, — that is, anesthetics being administered by incompetent anesthetists,— less fatalities would occur from the use of ether, and if any anesthetic causes trouble during any operation it should not be employed with that particular patient. A feeling of confidence in the anesthetist on the part of the patient is of great value, and if the patient succumbs during chloroform anesthesia, the effort should be made to expel all the chloroform from the lungs possible, before beginning artificial inspiration. Free purgation prior to the administration of the anesthetic and attention to cardiac and renal conditions was recommended.

DR. WILLIAM J. MAYO, Rochester, Minn., recommended the use of the Souchon anesthetizer for operations on the mouth and throat.

DR. JOHN E. SUMMERS, JR., Omaha, Neb., called attention to the temperature curve occurring as an after-effect of the anesthesia. In emergency cases he recommended that the stomach should always be washed out prior to administering the anesthetic, and reported a case in which chloroform had been administered without this precaution, and during the vomiting which occurred when the patient was recovering from the anesthesia, a piece of potato was forced into the windpipe, and although the trachea was opened, death from asphyxiation occurred.

DR. E. J. MELLISH, in closing, felt that there was more danger in the employment of chloroform than of ether under any circumstances. The

chloroform, being heavy, is also eliminated but slowly from the lungs, and the patient will be more or less poisoned thereby for some time.

The following officers of the section were elected for the ensuing year: Chairman, DR. CHARLES A. POWERS, Denver, Col.; Secretary, DR. E. WYLLES ANDREWS, Chicago.

Recent Literature.

The Diseases of Warm Countries, a Handbook for Medical Men. By DR. B. SCHEUBE, State Physician and Sanitary Adviser, Greiz; late Professor at the Medical School in Kioto (Japan). Translated from the German by PAULINE FALCKE, with Addenda on Yellow Fever by JAMES CANTLIE, M.B., F.R.C.S., and on Malaria by C. W. DANIELS, M.B., M.R.C.S. Edited by JAMES CANTLIE, M.A., M.B., F.R.C.S., D.P.H., Lecturer of the London School of Tropical Medicine; Surgeon Seamen's Hospital Society, Albert Dock Hospital; Lecturer Applied Anatomy Charing Cross Hospital Medical School, London; Consulting Surgeon Alice Memorial Hospital, Hong Kong. With all the original colored maps, charts, illustrations, etc., together with many additional plates, from the *Journal of Tropical Medicine*. Second revised edition. Philadelphia: P. Blakiston's Son & Co. 1903.

This volume of 594 pages is a translation by Pauline Falcke of the work of Dr. B. Scheube, and therefore appears for the first time in English. It is edited by James Cantlie, M.A., M.B., Lecturer in the London School of Tropical Medicine. The last few years have practically developed a new branch of medicine in the various diseases of the tropics and their relationship to affections common in temperate climates. The volume before us is an admirable, scientific, exhaustive presentation of these various diseases, amply illustrated and accompanied by excellent bibliographies, an attribute frequently missed in our modern medical books. The affections discussed include general infectious diseases, among which plague, yellow fever, beri-beri, leprosy, yaws and other less well-known affections are considered. Among diseases caused by intoxication, pellagra, lathyrism and snake venom poisoning find a place. A very considerable part of the volume is taken up with diseases caused by animal parasites and cutaneous and local diseases, together with certain organic affections, among which is included the so-called sleeping sickness. In all about forty-five different affections are discussed, all apparently in much detail. Although in some respects the subject matter seems distinct from our everyday practice, it is certainly true that the complete education of the modern physician demands increasingly a knowledge of the diseases endemic in tropical countries. It is, therefore, a source of congratulation that this most excellent work has been translated into English, thereby rendering it available for a larger number of readers. The binding and typography is in the usual form of the publishers, and the full-page illustrations are, for the most part, instructive and well executed.

A Textbook of Legal Medicine and Toxicology. Edited by FREDERICK PETERSON, M.D., Chief of Clinic, Nervous Department of the College of Physicians and Surgeons, New York; and WALTER S. HAINES, M.D., Professor of Chemistry, Pharmacy and Toxicology, Rush Medical College, in affiliation with the University of Chicago. Two imperial octavo volumes of about 750 pages each, fully illustrated. Philadelphia, New York and London: W. B. Saunders & Co. 1903.

Dr. Frederick Peterson of New York and Dr. Walter S. Haines of Chicago act as sponsors for this new and somewhat exhaustive treatise on legal medicine and toxicology. The first volume, which alone has reached us, is comprised in 730 pages, including an index, and has as its contributors sixteen well-known names in the medical profession of this country, among which we observe Bailey, Da Costa, Eskridge, Ewing, Hammond, Hektoen, Jelliffe, Langdon and Peterson.

The object of the work is to provide both the medical and the legal professions with a comprehensive survey of forensic medicine and toxicology, a task which the editors believe has not been done in any recent book in English. The first volume is devoted wholly to legal medicine, in which particular attention is paid to laboratory investigation. The second volume it is designed to devote in part to the allied subject of toxicology.

The usual subjects of legal importance are treated in this first volume. The increasingly important matter of railroad injuries is discussed by two writers. The medical jurisprudence of life and of accident insurance is given a somewhat prominent position. Peterson writes upon the subject with which he is known to be particularly familiar, the stigmata of degeneration; insanity in general is from the pen of the late Dr. Eskridge. As in all volumes of multiple authorship, the value of the individual articles must depend upon the special fitness of their writers. Evidently excellent judgment has been used in this respect, and we shall therefore expect when this work is completed that it will stand as an expression of the best and most modern opinion upon the various matters of medico-legal interest, which with our increasingly complex civilization are of necessity absorbing more and more attention.

The volume is illustrated in part by colored reproductions, which do not to our mind convey a more definite impression of the lesions under consideration than would carefully prepared photographs in one color. The difficulty of successfully reproducing colors as they appear under pathological conditions is exemplified by these illustrations.

THE BOSTON

Medical and Surgical Journal

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SANITARY ADMINISTRATION IN PENNSYLVANIA.

THE State Board of Health of Pennsylvania was established in 1885, largely as a result of the serious epidemic of typhoid fever which had occurred at Plymouth in that state in a previous year, and now, in the seventeenth annual report of the Board, Prof. W. H. Allen, in an admirable address, takes occasion to present many facts which give to his paper much more than local interest. With an unsparing hand he shows up the defects of sanitary administration in that state — defects which are plainly due, not to the inherent makeup of the board, but to the want of intelligent appreciation of its work on the part of the people. Similar defects may be found in almost any state in the Union, since when questions relating to the protection of property and the saving of human life are concerned, greater interest is manifested in and larger sums are provided for the former than for the latter. For the destruction of gypsy moths in a few limited localities a sum was appropriated three times as great as was ever granted to the State Board of Health of Massachusetts for the prosecution of its life-saving work in any year, and five times as great as the emergency fund provided for the prevention of the introduction and spread of Asiatic cholera in 1884. The small appropriation needed for preparing the material necessary for saving several thousand lives from death by diphtheria was opposed far more vigorously than the appropriation of a sum one hundred times as great for the making of state highways.

Professor Allen's address affords abundant food for thought not only to the legislature of Pennsylvania but also to every one who is interested in the public health. He introduces the subject by an excellent *résumé* of the evolution of sanitation from the earliest times, wherein, comparing the present with the past, he says:

> The general death-rate has fallen from twenty-eight or thirty per thousand to eighteen or twenty. This saving exceeds a hundredfold the expense of administering precautionary measures. Many attempts to estimate this economic saving have been made, but there is no way of estimating the economic gain. What humanity gains by increased vitality, fresh blood, bounding pulse and clear eye cannot be set in figures.
>
> The most sceptical, even more doubtful, perhaps, than the unprogressive mine operator or factory owner, is the inferior physician. Unfortunately he too often believes that the state is arrogating to itself the functions of his profession when it prescribes regulations for infectious diseases. He frequently resents the dictational attitude of the state when it limits the sphere of his own activity or imposes upon him uncompensated duties. The medical profession as a whole, however, has outgrown this dependence upon transmissible diseases and recognizes that its prosperity increases with every increase in the average standard of living. It is the man in the ten-room house rather than he in the one room who supports the physicians in luxury. It is the healthy man, the healthy family and the healthy community that pay large doctor's bills. Society to-day prefers to regard the family physician as an educator rather than a physician, one who prepares patients to avoid disease rather than one who does a general repairing business. It is probably true that medical curricula have not as yet adequately emphasized the socialization of the physician's skill; but fortunately, an advanced public sentiment, aided by teachers of social sciences and voluntary educational and scientific organizations, is effectually supplementing the medical curriculum and preparing the young physician to lead in sanitary reforms.

In the chapter on "Sanitation in Pennsylvania" the author treats of the sanitary condition of the state as it existed at the date of organization of the State Board of Health, and although many laws had been enacted providing for the sanitary protection of the people, but little provision had been made for their enforcement, the entire sum provided for the work of the State Board of Health in a state of six million inhabitants up to the present time being only $6,000 per year, or only one-tenth as much as is given for similar work in Massachusetts, a state having a population one-half as large.

When the State Board of Health was established, the only statute guaranteeing the protection of rivers against pollution was enacted to ensure the preservation of the fisheries. The legislature had also enacted laws with severe penalties to prevent the exposing of poisoned meat with the intent that it should be taken by horses, cattle or other domestic animals or fowl.

In the words of the writer, "From protection to dogs and chickens and fish to protection of human beings seems an easy step, yet after thirty years it seems as distant as ever." The effect of this gross and habitual neglect is shown in the high death-rate from typhoid fever which Philadelphia constantly suffers.

Prominence is justly given to the important subject of vital statistics:

> The object of gathering them is not to furnish material for future historians. They are to be used in shaping future history. They are facts collected with a view to improving social vitality, to raising the standard of life and to eliminating permanently those forces known to be destructive to health. Unless they are to be utilized in this way, they are of interest only to the historical grub. The state cannot afford to erect a statistical office to serve as a curiosity shop. Unless something is to be done to prevent the future recurrence of typhoid epidemics such as our cities, Pittsburg, Philadelphia, etc., have annually experienced, there is no special reason for asking the public printer to make tables which indicate the great cost of this preventable disease. Unless some one is at hand to abate the causes of transmissible diseases and to check infection at its inception, the notification of infection is of little social utility. Statistics presume efficient administration. An inefficient health officer will not care to gather statistics. If some one else furnishes him with statistics, they are as a lantern to a blind man.

Professor Allen's paper forms a distinct and valuable contribution to the literature of sanitary administration, and should be thoroughly read by every health officer who seeks the good of the community which he serves.

"THE INVALID'S EGYPT."

THE paper by Dr. F. Gordon Morrill, published in last week's issue of the JOURNAL, entitled "The Invalid's Egypt," is to be commended as a model of what that sort of paper should be both in form and substance. This is Dr. Morrill's second communication to these pages on Egypt, a previous paper having appeared in our issue for Nov. 28, 1901.

We take occasion to call attention to "The Invalid's Egypt" for several reasons: It is brief and concise, yet nothing of genuine importance to the physician who advises or to the invalid who thinks of going to Egypt is omitted; the information given is not compiled, but is drawn at first hand from intimate personal knowledge and experience, and the conclusions stated are the result of careful and revised intelligent professional observation, unbiased and unaffected by individual interests or surroundings.

We wish there were more such statements in regard to other countries frequented by large numbers of our health-seeking or travel-loving fellow-countrymen and countrywomen.

We are all called upon more or less frequently for counsel as to climates, as to the benefits to be expected from or the dangers to be guarded against in this or that country; as to the distinguishing characteristics of this or that locality and of the various periods of the twenty-four hours; as to what season of the year is best in one place and what in another; as to what clothes should be taken.

Too many invalids have gone or have been sent to distant places without an adequate or exact knowledge on their own part or on that of their medical advisers of what they were to prepare for or to encounter when reaching thei proposed destinations.

We therefore welcome on behalf of the physician and on behalf of the traveler, whether invalid or not, all such contributions as those of Dr. Morrill, to which we take very great pleasure in directing our readers' attention.

THE LATE MAJOR WALTER REED, M.D.

WE are glad to publish in another column a statement of the recent meeting held in Bar Harbor by friends of the late Major Reed to decide upon some fitting memorial for him and to attract public attention to one of the great medical benefactors of the time. A glance at the names of the men who took part in this meeting is sufficient guarantee of the wide and appreciative interest taken in Major Reed and his work by men not only of the medical profession, but others with large interests in progress of whatsoever character.

The conclusion reached by this first meeting was that an effort should be made to raise a memorial fund of at least $25,000, the income to be devoted to Dr. Reed's widow and daughter and later to be appropriated to the promotion of research in Dr. Reed's special field, or to the erection of a memorial to him in Washington. We have no doubt that this really modest appeal will meet with a hearty response not only from physicians everywhere but also from others of humanitarian feelings. Dr. Reed's services in the cause of medicine, and so in the cause of civilization at large, are hardly to be overestimated, and the least we may do in such a case is to express our appreciation by a quick and liberal response to the request which has been made by the committee having the matter in charge. We are

inclined to think that if more general public recognition could be had of the services of physicians who have made great discoveries in the realm of science or applied medicine, it would conduce to a better appreciation of the fundamentally important work which the medicine of the future has in store, and also possibly lead to a juster comprehension of the sacrifices and often true heroism of men engaged in the difficult and dangerous pursuit of knowledge as it relates to infectious disease. The public is notoriously slow to recognize merit unless it is brought to its attention in some palpably objective way. To this end it is both right and fitting that men who have rendered such service as this of Dr. Reed's should receive a commemoration which will be both enduring and impressive. We sincerely hope that the minimum amount of $25,000 may be far surpassed when the full significance of the memorial is appreciated by the public, whether lay or professional.

THE NEW MASSACHUSETTS GENERAL HOSPITAL OUT-PATIENT DEPARTMENT.

WE make mention in another column of the opening of the new out-patient department for the Massachusetts General Hospital, which has been under construction during the past two years. Although the opening of this large department of the hospital's work appears to have taken place without ceremony of any kind, we nevertheless feel that the importance of the work which this new building represents is worthy of mention from several points of view. In the first place, with the construction of a building of this size and equipment comes the recognition that the often somewhat neglected ambulatory practice of a great hospital is one of its most important functions. This is true not only from the point of view of the patient, but also from the standpoint of the development of medicine at large.

We have hardly as yet begun to develop the possibilities in the way of research and investigation which are inherent in a properly equipped out-patient department. There can be no question that with the ample facilities now at their disposal the physicians connected with this department of the hospital will gain a new inspiration for thorough, conscientious work. Such facilities as are now offered certainly bring with them an added responsibility on the part of the medical profession to avail themselves to the full of their new privileges.

We note, also, with gratification that in the planning of this new building those in authority have considered that most important function of the modern hospital — teaching. Two excellent, commodious amphitheaters are provided for the use of students, and the general arrangement of the rooms is such that teaching may be done in the various departments without interruption and therefore to good effect. We can see no reason why in this new building the needs of the patients, of the physicians and of the medical students who are later to become physicians may not be completely subserved. The effect of so imposing a structure, with so complete an equipment, cannot be other than to elevate the out-patient department, not only at this hospital but elsewhere, to the position which it should long since have taken in general hospital economy.

MEDICAL NOTES.

SMALLPOX AND TYPHOID FEVER IN PHILADELPHIA. — Typhoid fever, which is prevalent in Philadelphia, shows no tendency toward abatement. The increase in one week during the latter part of August was nearly thirty. Smallpox also still prevails in the city, with about twenty cases now under observation.

A DISCREPANCY. — *American Medicine* is authority for the statement that a male infant weighing thirteen ounces was recently admitted to the New York Post-Graduates Hospital, and that the birth of a twenty-five pound female child is announced from Lexington, Ky.

DEATH OF DR. SALAZAR. — The report has been generally circulated that Dr. Salazar, physician in charge of the American Hospital in Tampico, Mexico, has died of yellow fever, contracted during his vigorous attempt to check the spread of the disease in that place. Even after he recognized the fact that he had contracted the disease, he persisted in directing the work of the hospital.

RESIGNATION OF DR. G. A. SOPER. — It is reported that Dr. G. A. Soper, expert of the New York State Health Department in relation to the Ithaca typhoid fever epidemic, has resigned, through dissatisfaction with the dilatory policy of the local authorities.

FOURTH OF JULY CASUALTY LIST. — A special investigation of the various casualties incident

upon our last July 4 is published in the current issue of the *Journal of the American Medical Association*, and contains many facts worthy of serious thought. In the Northern and Western states 406 deaths occurred from tetanus, usually due to the toy pistol. Aside from tetanus in the celebration of the Fourth of July this year, 60 deaths were caused, 10 persons made blind, 75 persons lost one eye, 54 lost hands, arms or legs, 174 lost one or more fingers and 3,670 received other injuries, making a total of 3,983 persons injured. Adding the deaths from tetanus and from other causes, 4,449 persons are dead or injured. These figures should point a moral and teach a needed lesson.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.— For the week ending at noon, Sept. 2, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 41, scarlatina 13, typhoid fever 33, measles 11, smallpox 0.

OPENING OF NEW OUT-PATIENT DEPARTMENT AT THE MASSACHUSETTS GENERAL HOSPITAL. — The newly constructed out-patient building at the Massachusetts General Hospital was opened, without ceremony, for the reception of patients Aug. 31. The new building is located at the foot of Fruit Street, adjoining the general hospital. It is a three-story brick structure, in the shape of an L, constructed thus for the purpose of obtaining as much light as possible. The basement is occupied by the record room and the apothecary's headquarters, with a waiting-room for those whose prescriptions can be filled without consultation with the house physician. There is also a large room equipped for x-ray work. The first floor is devoted to men. On the second floor is the women's department, connected with which is the children's section, and on the top floor are the sections devoted to the treatment of diseases of the throat, nerves and skin.

A CODFISH FAMINE IS THREATENED. — It is said that the price of cod has reached the highest point since the civil war and that at present the receipts are approximately one-fourth of the regular supply, with small prospects of improvement. It is furthermore reported that the price of cod-liver oil, which comes largely from Norwegian fishing grounds, has advanced from $22 to $160 a barrel for the raw material. The reason for the deficiency of this usually abundant fish is worthy of and no doubt will have careful investigation.

NEW YORK.

SUICIDE IN 1902. — From statistics collected by Frederick L. Hoffman of the Prudential Insurance Company in regard to suicide in the year 1902 in fifty American cities, having an aggregate population of fourteen and one-half millions, it appears that the rate was highest in Hoboken, N. J., being thirty-five per hundred thousand. In New York the rate was twenty-one.

LONDON AND NEW YORK PARKS. — On returning from a trip abroad Commissioner of Parks Wilcox recently stated, in comparing London and New York parks, that while London probably had more space in its parks, he thought the system of gymnasiums and the park attendants system of New York were superior. London had a few parks equipped with gymnasiums, he said, but none compared with the William H. Seward Park in New York and he did not believe that any five parks in the English city contained as many features as the Seward Park.

APPROPRIATION FOR BOARD OF HEALTH. — The estimate of the Board of Health for the appropriation it will require for conducting the department during the year 1904 is $1,631,500 as against $1,047,721 allowed for the present year. The estimate includes $50,000 for the construction and equipment of a new steamboat.

ITHACA WATER SUPPLY. — On Aug. 22 the Ithaca Water Company commenced pumping water from its newly completed filter station into the mains of the city of Ithaca. It will be remembered that six months ago Cornell University loaned the water company $150,000 for the building of a purification plant, and the result of the work, which has been conducted by expert engineers, has been pronounced entirely satisfactory by Dr. Soper, the representative of the State Health Department at Ithaca. It is described as follows: "The plant is built on the mechanical or rapid system of purification. The water as soon as delivered to the receiving wells is charged with a solution of sulphate of alumina, which forms a flocculent precipitate which rapidly coagulates any organic impurities in the water, combined or suspended. The water is then passed into settling basins, where 70% of its impurities are precipitated. It then passes through six filters of 3,000,000 gallons daily, capacity." At

the time of the typhoid fever epidemic at Ithaca the mayor appointed a water commission, which decided that the best method to obtain a pure supply was by the sinking of artesian wells, and accordingly a number of such wells have been driven by the city. The water company, however, after consulting the best experts on the subject, concluded that the construction of a filter plant was the only practicable way in which it could furnish its patrons with pure water. It is stated that the experts all agreed that the correct solution of the Ithaca water-supply problem was not to try for different water, but to take that which was already in use and purify it.

Miscellany.

MEMORIAL OF THE LATE MAJOR WALTER REED, M.D.

On the 15th of August a meeting was held in Bar Harbor of friends of the late Major Reed, M.D., U. S. A., to whom in a large degree is due both the discovery of the mode by which yellow fever has been spread and also the consequent suppression of that dire disease. Representative men were present from different parts of the country and letters were received from various members of committees already appointed to promote the collection of a memorial fund in grateful commemoration of Dr. Reed's services. Important suggestions were presented from President Eliot, Dr. W. W. Keen, Prof. J. W. Mallet and others. Dr. Daniel C. Gilman, chairman of a committee appointed by the American Association for the Advancement of Science, presided, and Dr. Stuart Paton acted as secretary. Among those who took part in the conference were Dr. W. H. Welch of Baltimore, Dr. Janeway of New York, Dr. Abbott of Philadelphia, Dr. Hertor of New York, Dr. Barker of Chicago, Dr. Putnam of Buffalo, Dr. Fremont Smith of Bar Harbor and Dr. Sajous of Philadelphia; and besides these medical gentlemen, Bishop Lawrence of Massachusetts and Messrs. Morris K. Jesup, President of the New York Chamber of Commerce, John S. Kennedy, President of the Presbyterian Hospital of New York and William J. Schieffelin of New York. The following conclusions were reached: That an effort should be made to raise a memorial fund of $25,000 or more, the income to be given to the widow and daughter of Dr. Reed, and after their decease the principal to be appropriated either to the promotion of researches in Dr. Reed's special field, or to the erection of a memorial in his honor at Washington.

Arrangements were made for the publication of circulars explaining this movement and asking co-operation not only from the medical profession but from all liberally disposed individuals who appreciate the value of Dr. Reed's services to mankind.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 22, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Disease.	Typhoid fever.
New York . .	3,785,156	1,202	490	37.65	9.14	1.99	20.03	1.57
Chicago . . .	1,885,000	483	151	41.60	5.10	.62	21.94	3.52
Philadelphia	1,378,527	422	154	35.06	4.23	2.84	11.61	4.26
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	202	72	33.16	4.95	—	16.33	.50
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	124	60	41.12	.80	3.22	22.58	4.80
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee . .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	75	18	41.32	2.66	—	24.00	—
Boston . . .	603,163	203	81	32.51	5.91	3.45	18.72	.50
Worcester . .	132,044	44	26	27.26	2.27	—	27.26	—
Fall River . .	115,549	43	27	55.80	6.97	—	46.50	—
Lowell . . .	101,959	39	21	41.02	—	2.56	30.76	2.56
Cambridge .	98,639	28	11	39.28	3.57	—	32.14	3.57
Lynn	72,497	31	10	19.35	—	3.22	3.22	—
Lawrence . .	69,766	20	11	45.00	—	5.00	30.00	5.00
Springfield .	69,389	14	1	21.42	7.14	—	7.14	—
Somerville .	68,110	13	5	23.10	—	—	15.40	—
New Bedford	67,198	36	17	50.00	5.55	5.55	36.10	—
Holyoke . . .	49,286	—	—	—	—	—	—	—
Brockton . .	44,873	6	2	16.67	—	—	—	16.67
Haverhill . .	42,104	8	4	25.00	—	—	12.50	—
Newton . . .	37,794	7	4	2.90	—	—	42.90	—
Salem	36,876	27	17	37.03	3.70	—	25.92	3.70
Malden . . .	36,386	14	2	—	—	—	—	—
Chelsea . . .	35,876	7	6	56.20	—	—	14.30	14.30
Fitchburg . .	35,069	8	3	25.00	—	—	—	—
Taunton . . .	33,656	21	8	52.38	—	—	33.33	—
Everett . . .	28,030	4	1	—	25.00	—	—	—
North Adams	27,893	16	4	31.25	—	6.25	12.50	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	5	3	80.00	—	—	60.00	—
Waltham . .	25,198	6	1	—	16.67	—	—	—
Brookline . .	22,608	6	—	16.67	—	—	16.67	—
Pittsfield . .	22,580	8	2	—	12.50	—	—	—
Chicopee . .	21,031	5	2	40.00	—	—	40.00	—
Medford . .	20,962	7	1	—	—	—	—	—
Northampton	19,883	5	1	—	—	—	—	—
Beverly . . .	15,302	3	3	66.67	—	—	66.67	—
Clinton . . .	15,161	3	2	—	33.33	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	8	1	37.50	—	—	—	12.50
Woburn . . .	14,300	5	2	—	20.00	—	—	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	5	4	80.00	20.00	20.00	40.00	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	5	2	40.00	—	—	20.00	—
Melrose . . .	13,600	—	—	—	—	—	—	—
Westfield . .	13,418	5	2	60.00	—	20.00	20.00	20.00
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	2	1	50.00	—	50.00	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody . . .	13,179	—	—	—	—	—	—	—
Gardner . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	6	2	33.33	—	—	33.33	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	1	1	—	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,182; under five years of age, 1,236; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,181, acute lung diseases 193, consumption 351, scarlet fever 15, whooping cough 18, cerebrospinal meningitis 11, smallpox 12, erysipelas 6, measles 10, typhoid fever 70, diarrheal diseases 625, diphtheria and croup 59.

From whooping cough, New York 10, Chicago 1, Philadelphia 3, Pittsburg 1, Fall River 1, Fitchburg 2. From erysipelas, New York 2, Philadelphia 1, Pittsburg 1, Providence 2. From smallpox, Chicago 2, Philadelphia 2, Pittsburg 8. From scarlet fever, New York 4, Chicago 2, Philadelphia 3, Baltimore 1, Providence 1, Boston 1, New Bedford 3.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Aug. 8 the death-rate was 14.3. Deaths reported, 4,139; acute diseases of the respiratory organs (London) 107, whooping cough 61, diphtheria 44, measles 57, smallpox 8, scarlet fever 38.

The death-rate ranged from 5.1 in Burton-on-Trent to 26.6 in Bootle. London 15.0, West Ham 11.1, Brighton 10.0, Portsmouth 9.9, Southampton 8.5, Plymouth 13.5, Bristol 13.2, Birmingham 14.3, Leicester 11.1, Nottingham 15.1, Bolton 17.7, Manchester 17.5, Salford 17.3, Bradford 15.5, Leeds 15.8, Hull 16.3, Newcastle-on-Tyne 20.4, Cardiff 9.7, Rhondda 1.39, Liverpool 18.0, Hornsey 5.3, Warrington 19.6.

METEOROLOGICAL RECORD.

For the week ending Aug. 22, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. 16	30.06	64	69	60	72	92	82	N W	N W	3	7	O.	R.	T.
M. 17	30.02	70	78	61	78	70	74	N W	E	3	3	C.	C.	.10
T. 18	30.06	66	73	59	73	74	74	N W	S	4	10	F.	C.	0
W. 19	29.97	72	80	64	81	79	80	S W	S	10	10	C.	C.	0
T. 20	29.74	71	77	65	93	85	89	S	N	3	5	O.	O.	.22
F. 21	29.94	70	79	62	66	74	70	N W	S W	12	13	C.	C.	0
S. 22	29.73	74	86	63	76	66	71	S W	W	11	12	C.	O.	0
☞	29.93		77	62			77							.32

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING AUG. 20, 1903.

BANKS, C. E., surgeon. Three days' leave of absence from Aug. 8, 1903, under paragraph 189 of the regulations.

CARMICHAEL, D. A., surgeon. Bureau order of Aug. 10, 1903, directing Surgeon Carmichael to report to Director of Laboratory for special instructions, amended so that he shall report at the Laboratory for temporary duty. Aug. 17, 1903.

PERRY, J. C., passed assistant surgeon. Relieved from temporary duty in the Bureau, and directed to report to the Director of the Laboratory for duty. Aug. 15, 1903.

ROSENAU, M. J., passed assistant surgeon. Granted leave of absence for seven days from Aug. 19. Aug. 18, 1903.

NYDEGGER, J. A., passed assistant surgeon. Granted leave of absence for one month from Aug. 13, 1903, on account of sickness. Aug. 20, 1903.

WICKES, H. W., passed assistant surgeon. Leave of absence for one day granted by Bureau telegram of Aug. 13, 1903, revoked. Aug. 20, 1903.

PARKER, H. B., passed assistant surgeon. Relieved from special temporary duty at Vera Cruz, Mexico, to date from July 22. Aug. 17, 1903. Granted leave of absence for seven days from Aug. 19. Aug. 18, 1903.

MCCLINTIC, T. B., assistant surgeon. To report to Director of the Laboratory for duty, to take effect Aug. 1, 1903. Aug. 17, 1903.

WILLE, C. W., assistant surgeon. Relieved from duty at the Laboratory, to take effect Aug. 3. Aug. 17, 1903. Detailed as inspector of unserviceable property at Baltimore, Md. Aug. 18, 1903.

DELGADO, J. M., acting assistant surgeon. Granted extension of leave of absence for seven days from Aug. 12. Aug. 17, 1903.

FOSTER, J. P. C., acting assistant surgeon. Granted leave of absence for seven days from Aug. 19. Aug. 19, 1903.

FRISSELL, C. M., acting assistant surgeon. Department letter of Aug. 6, 1903, granting Acting Assistant Surgeon Frissell leave of absence from Aug. 6 to 18, amended to read from Aug. 10 to 25. Aug. 17, 1903.

SCHUG, F. J., acting assistant surgeon. Granted leave of absence for ten days from Aug. 15. Aug. 17, 1903.

SPOHN, A. E., acting assistant surgeon. Granted leave of absence from July 26 for thirty days. Aug. 17, 1903.

APPOINTMENTS.

Jamin H. Hamilton appointed acting assistant surgeon for duty at Richford, Vt. Aug. 5, 1903.

Stacy D. Williamson appointed acting assistant surgeon for duty at Malone, N. Y. Aug. 14, 1903.

PROMOTIONS.

Assistant Surgeon L. D. Fricks commissioned (recess) as passed assistant surgeon, to rank as such from Aug. 2, 1903.

Assistant Surgeon V. G. Heiser commissioned (recess) as passed assistant surgeon, to rank as such from Aug. 3, 1903.

Assistant Surgeon M. J. White commissioned (recess) as passed assistant surgeon, to rank as such from Aug. 4, 1903.

CHANGES IN THE MEDICAL CORPS OF THE NAVY, FOR THE WEEK ENDING AUG. 29, 1903.

E. M. BROWN, assistant surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the "New York."

M. S. ELLIOTT, surgeon. Detached from the "New York" and ordered home to wait orders.

N. H. DRAKE, surgeon. Detached from the "New York" and ordered to the "Maine."

D. O. LEWIS, surgeon. Ordered to the "New York" as fleet surgeon of the Pacific Squadron.

H. C. CURL, passed assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the "New York."

W. R. DUBOSE, surgeon. Detached from the "Maine" and ordered to duty in the Bureau of Medicine and Surgery.

J. F. MURPHY, surgeon. Detached from the "Monocacy" and ordered to the "Wisconsin."

J. C. THOMPSON, assistant surgeon. Detached from the "Chesapeake" and ordered to the Naval Academy.

RECENT DEATHS.

ALLEN R. THOMPSON, M.D., a prominent physician of Troy, N. Y., died at Asbury Park, N. J., on Aug. 22, at the age of forty-five.

WILLIAM S. PLAYFAIR, M.D., of London, one of the most distinguished gynecologists and obstetricians of England, has recently died at the age of sixty-seven. Beyond his very large and successful practice, he was the author of two books on obstetrics, one of which became popular as a textbook and was reprinted in the United States.

CHARLES F. HILDRETH, M.D., died at Manchester, N. H., Aug. 18, at the age of seventy-one. He was graduated from the Harvard Medical School; began practice in Concord, N. H., and was for several years surgeon at the State Prison. During the civil war he served as assistant surgeon in the navy and also as surgeon in the 40th Massachusetts Regiment. At the conclusion of the war he began practice again in Concord, and later removed to Manchester, where he was at the time of his death.

BOOKS AND PAMPHLETS RECEIVED.

Manual of the Diseases of the Eye, for Students and General Practitioners. By Charles H. May, M.D. Third Edition. Illustrated. William Wood & Co. New York, 1903.

Inefficiency of Ferrous Sulphate as an Antiseptic and Germicide. By Allan J. McLaughlan. U. S. Public Health and Marine Hospital Service. Bulletin No. 15. Washington, 1903.

Mundpflege bei Quecksilberkuren und einigen Mundaffektionen. von Julius Mueller, M.D. Berlin, 1903.

Consideration of the Medico-Legal Aspects of Aphasia. By Charles H. Hughes, M.D. St. Louis, 1903.

Some Practical Suggestions on Tropical Hygiene. By Maj. Henry P. Birmingham, Surgeon, U. S. A. Reprint. 1903.

Artificial Parthenogenesis in Molluscs. By Jaques Loeb. University of California Publications, Aug. 3, 1903.

Secondary Eruptions in Smallpox. By Jay F. Schamberg, A.B., M.D., of Philadelphia. Reprint. 1903.

A Thesaurus of Medical Words and Phrases. By Wilfred M. Barton, M.D., and Walter A. Wells, M.D. W. B. Saunders & Co., Philadelphia, New York, London. 1903.

Verhandlungen des Vereins für innere Medizin in Berlin. Herausgegeben von dem Vorstande des Vereins. Jahrgang XXII, 1902–1903. Sonderabdruck aus der "Deutschen Medizinischen Wochenschrift." Jahrgang 1902 und 1903. Berlin, 1903.

Radium and Other Radio-active Substances; Polonium, Actinium and Thorium, with a Consideration of Phosphorescent and Fluorescent Substances, the Properties and Applications of Selenium and the Treatment of Disease by the Ultra-violet Light. By William J. Hammer. Illustrated. New York: D. Van Nostrand Co. 1903.

Modern Bullet Wounds and Modern Treatment, with Special Regard to Long Bones and Joints, Field Appliances and First Aid. Part of the Alexander Essay for 1903. By Major F. Smith, D.S.O. Philadelphia: P. Blakiston's Son & Co. 1903.

Transactions of the Seventieth Annual Session of the Tennessee State Medical Association. Nashville. 1903.

The Practical Medicine Series of Year Books, comprising ten volumes on the Year's Progress in Medicine and Surgery. Issued monthly. Under the general editorial charge of Gustavus P. Head, M.D. Vol. VIII. Chicago: The Year Book Publishers. July, 1903.

Twenty-second Annual Report of the State Department of Health of New York, for the Year Ending December 31, 1902. With maps. Albany, 1902.

Original Articles.

CANCER OF THE INTESTINE, ETC.; ITS SURGICAL ASPECT, WITH REPORT OF CASES.[1]

BY HOMER GAGE, M.D., WORCESTER, MASS.

THE danger of septic infection was one of the most important if not the controlling factor in limiting the field within which surgical operations could be properly undertaken a generation ago. Its removal by the development of an aseptic technique marks the beginning of a new surgery, one of whose first impulses seems to have been to see how much mutilation and interference nature will permit. Life is found to be quite livable without many of the organs that had hitherto been supposed to be essential to its existence.

But now that the possibility of these radical excisions and resections is established, must come the second stage in the new surgery, namely, a careful study of the remote as well as the immediate results of these new operations.

It seems quite certain that we shall discover that much that is possible is attended with very grave dangers to life, and is followed by an impairment of comfort and health that makes the life that is left hardly worth living. Already strong protests are being made by our medical brothers against many of the more radical operations — protests that must be heard and if possible answered, for, after all, our purpose must be, not to see what surgical feats can be successfully accomplished, but how they can be made to contribute to the prolongation of life and the relief of suffering.

One of the most notable protests that has been made recently was contained in the anniversary discourse before the New York Academy of Medicine, delivered Dec. 5, 1901, by Dr. Reginald H. Fitz of Boston.

It is an exceedingly temperate and judicial review of the ultimate results of surgical interference with diseased conditions that had hitherto been regarded as incurable. Much of it is naturally taken up with a consideration of the surgery of internal cancer, and it is to one feature of this that I wish to call your attention for a few moments.

In the records of the Massachusetts General Hospital for the ten years from 1890 to 1900 he found "ten cases of intestinal resection for cancer, of which eight died within a month after the operation; the ninth patient was found to have a girdling ulcer without gross evidence of malignant disease, although from microscopical examination regarded as an adeno-carcinoma. He was at work as janitor and enjoying fair health two and a half years after operation. The tenth patient was not heard from. Of the five cases of intestinal anastomosis (for cancer) two died within the fortnight following operation; one lived six months and two have not been heard from." "Of the seventy-seven cases of cancer of the alimentary canal two, or only 3%, were living at the end of three years after the operation."

If we consider the question of relief of suffering in those whose history subsequent to the operation could be learned, the result is equally disappointing. I have thought it would be worth while, therefore, to look very briefly at the results which have been obtained by others in the surgical treatment of intestinal cancer, and to add my own small, but to me, significant experience.

In the first place, one finds it quite unsatisfactory to depend overmuch upon a general compilation of reported cases. The immediate results are so much better than the full reports from the more important clinics that one feels at once that the tendency to report individual successes makes the general table relatively unreliable as a true index of the general mortality, and, further, most of the cases are reported too early to give any assurance of the success or failure of the operation. Lardennois collected 241 cases with 24 deaths, a mortality of 34.8%, and Bovis 171 cases, with a mortality of 31.5%. Contrast this with the combined experience of such operators as Krönlein, Korte, Czerny, Billroth-Salzer and König, whose 58 cases resulted in 28 deaths, a mortality of 48.4%; of these Korte's record of 19 cases with 7 deaths, or 36.8% is the best — all of the others having a mortality of 50% or over. At St. Thomas' Hospital between 1888 and 1897, there were 12 resections with 7 deaths, and Von Bramanns in 1897 reported 14 cases with 6 deaths.

According to Korte, the cecum is the most favorable locality for operative interference, he having resected for carcinoma five times and sarcoma once, with no deaths. This view is further supported by McEwen, who reports 5 cases with one death, and by Goullioud, who had 6 enterectomies for cancer of the cecum, with but one death; Krönlein, however, had 6 cases with 3 deaths. It follows that the general mortality in intestinal resection for malignant disease is still very high,— almost 50%,— except possibly in the region of the ileo-cecal valve. So much for the immediate, now let us look for a moment at the later results.

Of Korte's 12 successful cases, 5 were well from 3 to 8½ years after operation, 3 of his cases of resection of cecum being alive 8½, 6¼ years respectively. Two of McEwen's cases were alive more and 2 less than 3 years after operation. One of Goullioud's patients was alive 3 years, the others less than 1 year, while Krönlein had 5 cases in which there had been no recurrence at the end of from 5 months to 14 years. Of Von Bramanns' cases, 4 had remained well for more than 3 years and 3 for less.

Taking the experience of these operators, all of whose reports seem very complete, there were 56 cases, of which 13, or 23 %, had survived the 3-year limit without any evidence of returning disease. These figures are, it seems to me, distinctly encouraging, and do much to overcome

[1] Read before The Massachusetts Medical Society, June 9, 1903.

the prejudice naturally evoked by the very unfavorable statistics quoted by Dr. Fitz.

It must be remembered that the field is comparatively new, that the diagnosis is not usually made until the disease is pretty well advanced and that a considerable accumulation of experience must be made to furnish a basis for selection of cases suitable for operation. In view of the experiences already quoted, it seems reasonable to assume that when the growth has not extended beyond its original seat, and can be removed with a liberal margin of uninvaded tissue, although the immediate mortality will be large, a period of immunity from recurrences can be fairly expected in a proportion of cases that will compare favorably with the results obtained from the removal of cancer in other organs.

My own experience consists of but four cases:

CASE I. Cancer of the small intestine; acute intestinal obstruction, without previous symptoms. Operation on tenth day. Death from shock. Male, twenty-three years old, seen in consultation with Dr. W. M. Pearson of Ware. Had typhoid fever seven years ago, and has been troubled with constipation and occasional attacks of indigestion for two or three years, a very hearty eater, strong and active up to the advent of his last illness. On March 12 he ate a large quantity of cheese, from one-half to a pound, and on the following day was suddenly seized with pain in his stomach and vomiting. The pain subsided, but a continuance of the vomiting led him to consult Dr. Pearson on the 15th. In spite of a good variety of cathartics and enemata, no movement of the bowels could be secured, and the vomiting persisted. There was no distention and but little pain. Temperature had not been above 99, and until the evening of the 24th pulse had been of good quality and about 100.

On the evening of the 24th he showed signs of exhaustion, the vomiting became stercoraceous, and the pulse rose to 130. I saw him at 2 A.M. on the 25th; he was conscious, with a pinched, anxious expression, tongue moist, extremities somewhat cold and was very restless. The abdomen was not distended, but was somewhat tender, especially to left of median line below level of umbilicus, where there was a distinct increase of muscular resistance, and where under ether a definite tumor could be easily made out.

On opening the abdomen the intestines were empty and collapsed; there was a small amount of turbid serum present and some very recent easily separated adhesion. The lump on the left side was delivered through the incision and found to be contained within the lumen of the gut, which on its surface showed simply signs of fresh peritonitis. The portion containing the lump was partially intussuscepted into the intestine beyond. This part was resected, and the two ends united by a double row of sutures. The patient's condition was very unsatisfactory from the beginning, and he died about three hours after the operation. The specimen was examined by Dr. F. H. Baker, who reported "that it consisted of about four inches of the small intestine, probably the lower part of jejunum. On opening, it is seen to be nearly occluded by a firm, irregular, lobulated polypoid growth, with a thick base and without ulcerations. The growth measures one and a half inches in width. No growth is apparent on the exterior surface of the bowel, but there was some contraction about the base of the tumor. Microscopical sections show it to be made up of an exuberant growth of glandlike structures, irregularly lined with columnar epithelium. Many of the glands are somewhat necrotic. Between the glands there is a coarse fibrous stroma.

"The diagnosis is adeno-carcinoma of the small intestine."

I have given the history of this case at some length because cancer in this locality is exceeding rare, and because its existence was so entirely unexpected. There was absolutely nothing in the young man's history that would lead any one to suspect the real condition. It illustrates afresh the value of operating early in all cases of intestinal obstruction, and the possibility, in some cases at least, of finding a cancerous growth that has not invaded the walls of the bowels and has no palpable secondary glands. A more perfect case for complete and thorough removal of cancer in any part of the body could not be desired. It is a strong incentive to a careful study of the conditions which should lead to earlier recognition and operation.

CASE II. Cancer of cecum; symptoms of chronic appendicitis; resection; alive and well now, two years and eight months after operation. Miss N., thirty years old, a seamstress, had always had a spot in right side that was tender; supposed she had inherited a gastric trouble from her mother. For more than ten years had been awakened in the night by attacks of colicky pain in abdomen, and for four years these had been growing more and more frequent. There was always severe pain in the right side, and the attacks of colic would occur perhaps twice in a week, and then not for six weeks; would sometimes last several hours, and were controlled only by morphine. For two years she had noticed that the gas would collect and form a bunch in the right iliac region. She had been very constipated, but the movements had been normal in appearance. During the last year she had lost flesh, and found it difficult to keep on with her work. She was referred to me as a case of chronic appendicitis. There was marked tenderness with a distinct mass in the cecal region, and I acquiesced in the diagnosis.

I operated Sept. 20, 1900, and found the cecum converted into a hard mass; appendix not involved, normal in appearance, and the lower end of the ileum very much dilated. There were no enlarged mesenteric glands. The cecum was movable and not adherent to any of the adja-

cent structures. I excised it with a portion of the ileum as well as of the ascending colon. So much enlarged was the caliber of the small intestine that an end-to-end suture with the colon was easily effected. Her recovery was uninterrupted, and except for a small ventral hernia, which is easily controlled, she has been in better health than ever, with no sign of recurrence.

Dr. Baker reports "that the specimen consists of the last two inches of the ileum and the first five inches of the cecum. There is no evidence of the growth on the outside of the intestine, but involving the ileo-cecal valve there is felt a hard, contracting, encircling mass. On opening the lumen, the ileo-cecal valve is contracted so that its aperture is about the size of an ordinary lead pencil. Numerous small papillary growths project into the lumen about the ileo-cecal valve, and several small isolated ones are seen springing from the mucosa of the cecum as far up as one and a half inches from the valve. Sections show the intestinal wall to be about four times its normal thickness, and to be infiltrated with an adenomatous growth. The diagnosis is adeno-carcinoma."

The result in this case certainly justified the interference, and is worth making several unsuccessful efforts to attain. If we could obtain as complete immunity in even 20% of our cases, it would be as favorable a showing as we can get in some of the better established and less opposed operations for cancer, in some of the more superficial and easily accessible parts of the body.

CASE III. Cancer of hepatic flexure; chronic intestinal obstruction; resection with artificial anus; subsequent closure; death from recurrence.

The patient was a male, fifty-two years old, who had for years been a pretty constant sufferer from intestinal indigestion and constipation. In 1898 he went to Cuba as a captain in the regular army; had while there a severe attack of dysentery, and was invalided home. For a time he seemed to be much better and stronger than he had been for many years, but during the winter of 1901–2 his old trouble returned, and he was evidently losing both flesh and strength.

About March 1, 1902, he had a severe attack of abdominal distress, with vomiting and obstinate constipation. Flatus passed freely, and there were some small but unsatisfactory movements. During the next twelve days his condition became worse; there was severe abdominal distention, but no local pain or tenderness. He could retain very little nourishment, and as the obstruction seemed to be growing more complete, in consultation with his attending physicians, Drs. Wood and Baker of Worcester, I advised his removal to the hospital for exploratory incision.

This was done on March 13, and I found the obstruction to be caused by an annular constriction in the neighborhood of the hepatic flexure. A hard infiltrating and contracting mass involved the whole circumference of the bowel, which was intimately adherent to the abdominal wall. There were several enlarged glands to be felt in the adjacent mesentery. I succeeded in freeing the mass and excising it with enough of the mesentery to include the glands which I had felt. The patient's condition was such that I did not feel justified in attempting a careful suture, and had to be satisfied with an artificial anus at that point. He rallied well from the operation, was able to take and retain his nourishment, and at the end of a week was removed to his home.

Here he gained rapidly in flesh and strength, and was able to be up and walk about the house. On the 25th of April, six weeks after the first operation, I attempted to close the fistula and found the disease was already returning in the mesentery and adjacent parts. Symptoms of obstruction quickly supervened, and he died on the 25th of May.

Dr. Baker reported "that the specimen consisted of about five inches of the ascending colon near the hepatic flexure. Occupying about two inches of the middle was a firm, nodular, encircling, contracting growth, with broken adhesions over its external surface. This growth in the interior of the intestine presents a rough polypoid surface with several small areas of ulceration. The lumen of the gut was reduced to a little less than one-half inch. Sections showed the mucosa and submucosa in places to be nearly destroyed, and the growth to be made up of an irregular-shaped glandlike tissue, with the glands lined with columnar epithelioma. Some sections showed marked necrosis. The interglandular stroma was made up of coarse fibrous tissue. Adeno-carcinoma of large intestine."

The operation in this case is fairly open to the criticism made by Dr. Fitz upon surgical interference with intestinal cancer in general. If it was reasonable to open the abdomen and to make sure that the obstruction was not something that could be easily and safely relieved, a matter perhaps it should have been possible to decide without, in view of the extent of the disease and the improbability of being able thoroughly to remove it, I think the interference should have stopped there. I shall certainly never again attempt or advise removal under similar conditions.

CASE IV is one which I reported in the BOSTON MEDICAL AND SURGICAL JOURNAL for Dec. 19, 1901. It was that of a man seventy-five years old, who was operated on by Dr. McBurney of New York for acute intestinal obstruction. Six inches of the lower half of the sigmoid flexure was resected for carcinoma. Five years later I operated for a second obstruction caused by internal strangulation, and found no evidence of recurrent disease. He is alive and well now, seven years after the removal of the cancer, and in his eighty-second year.

Clinically these cases illustrate three different ways in which the presence of a malignant growth in the intestinal canal may manifest itself. In two, acute intestinal obstruction was the first indication of the existence of any serious trouble. There had been absolutely nothing in either

case to suggest the possibility of organic disease, and as we review the histories of intestinal cancer in the reported operations, one is surprised to find how often its development proceeds wholly unsuspected.

The diagnosis in this class, therefore, cannot be made until the abdomen has been opened, and there can be no question as to the propriety of the operation. When, as in Case II, the accompanying symptoms are such as to suggest a chronic appendicitis, — and the frequency with which cancer is found in the cecal region makes this class relatively a large one, — the desirability of surgical interference is equally clear.

The existence of the more serious lesions can seldom be made out beforehand, and fortunately the early appearance of the symptoms can lead to an early discovery of the growth by a surgical incision, and to its early removal while yet confined to its original seat, when all the conditions for success are most favorable. This explains, I think, in no small measure, the comparative low mortality and long immunity from recurrence observed in cases where the disease has been confined to the region of the ileo-cecal valve.

In that class of cases represented by the patient with chronic obstruction, there is certainly room for a very wide and honest difference of opinion. If left until the obstruction is nearly complete, the growth has too often spread by contiguity or metastasis, until its complete and thorough removal is impossible. Interference under such conditions may furnish the opportunity for the exhibition of great technical skill on the part of the surgeon, but can hardly be of any substantial benefit to the patient, and too often supplies the sort of failures which are contained in Dr. Fitz's paper, to the discredit of surgery.

Much the same can be said of those cases in which operation is undertaken only after the discovery of a palpable tumor. When the disease has reached a point where the diagnosis is only too apparent, surgery is unlikely to afford any great measure of relief, and even an exploratory incision should be undertaken very cautiously, if at all.

In these cases, before the appearance of obstruction or tumor, it will usually be found that there have been for a longer or shorter time, symptoms of intestinal indigestion, abdominal pain, constipation often alternating with diarrhea and other intestinal disturbances, which, in the light of the later developments, were their forerunners.

I believe there is a time in every case of cancer of the intestine, as of cancer in other more exposed parts of the body, when the growth is local and can be removed with reasonable probability of a very long immunity from recurrence, and it is to a study of these earlier symptoms, with a view to the recognition of this earlier stage, that we must invoke the hearty co-operation of our medical friends, for that is the appropriate time for surgical interference.

I would confine the exploratory incision, then, to those cases in which the earliest symptoms were those of acute intestinal obstruction, of appendicitis, acute or chronic, and to those cases of chronic intestinal disturbance in which there was a clear presumption that malignant disease, if it existed, had not advanced beyond the point where its radical removal was impossible.

So, too, after exploration and the discovery of a malignant growth, I would stop there, where the disease was found to have invaded the mesentery, its lymphatics, the adjacent peritoneal surfaces by adhesions, or other organs by metastasis, to an extent to make its complete and radical removal unlikely. It happens often enough here, as elsewhere, that cancer has invaded adjacent structures even when its presence cannot be detected by sight or feeling. I would reserve the radical operation for those cases in which the disease, so far as gross appearances are concerned, can be wholly isolated and removed.

I have said little of the palliative operation of colostomy and the various forms of intestinal anastomosis and exclusion, because I feel that if the growth cannot be removed with a fair assurance of immunity from recurrence there can be but little relief or satisfaction in a few weeks or months of added life with the burdens of a fecal fistula or a more or less imperfect anastomosis. Such an existence, short and full of suffering as it so often is, may be important enough for some special purpose to make one or the other of these operations necessary or desirable.

Colostomy in particular may be necessary for the relief of acute intestinal obstruction, or under other conditions as a preliminary to resection, but in the advanced stages of the disease none of these operations can afford more than a very temporary and imperfect relief, and they belong, it seems to me, to the surgery of the mechanic, not of the Samaritan.

DISCUSSION.

DR. F. S. WATSON of Boston: I want to say one word only with regard to that part of Dr. Gage's paper which deals with the question of making an artificial opening in the bowel as a palliative measure in inoperable cases of malignant disease of this locality. I cannot agree with either the reader or with Dr. Fitz, whom he quotes, with regard to this point, that it is not worth while to do colostomy under such circumstances.

Dr. Fitz gives, in the paper referred to by Dr. Gage, an entirely erroneous judgment with regard to colostomy as a measure of relief in these cases. Colostomy performed as Mayo recommends, on the same principle as that of the Ssabana Jew Frank gastrostomy in cases of cancer of the stomach, uniformly affords very great comfort to the patient, and does not simply prolong life at the expense of substituting a condition so disgusting and obnoxious to the patient

and to those who care for him that it is worse than that produced by the disease left to itself.

It is true that we cannot relieve the pain which is due to the pressure of the tumor, but why we should allow the patient previous to that time, or for that matter after it is present, to support the additional suffering which arises from the distention due to obstruction, or that which proceeds from the passage of feces over an ulcerated surface, when we have the power to remove both by an operation which when properly done, controls the action of the bowels perfectly in the majority of cases, and removes all fecal matter from contact with the diseased area, is more than I can understand. It seems to me that it would be quite as reasonable to permit a patient to die of suffocation during diphtheria in a hopelessly fatal case, rather than to supply to him the ease furnished by a tracheotomy, and thus take that sting out of the load of distress to be sustained before death comes. I am confident that any of us who was suffering from the great pain of distention in obstructive cancerous disease of the bowel would call pretty loudly for the relief of colostomy if he had ever seen it given to another under such conditions.

Dr. A. T. Cabot of Boston: Dr. Gage's paper I think shows very clearly that what we need is not fewer but earlier operations; and that if our medical brethren would teach us how to discover these cases earlier, rather than point out cases which we lose because they have come to us too late, we might hope to advance in the direction of cure. We know that in these cancers at that part of the intestine which is accessible to constant examination in the lower bowel and rectum, there is a stage during which a radical removal is a cure. I have a number of patients now well from whom I have removed adenomata, adeno-carcinomas of the lower bowel. If you could learn the existence of these growths of the higher bowel during that stage, the removal would be quite as easy, even more so, because the bowel is less attached to the parts about. It seems to me the thing we must seek for is a closer observation of cases during the earlier stage of obstructon,— partial, recurrent obstruction,— because these patients often give a history of obstipation that amounts almost to obstruction which with castor oil passes off, and then two or three months later they cannot get movements with castor oil, and are turned over to the surgeon. I think we ought to work towards better diagnosis of the earlier stages. Whether we are going to get that by examination of the feces or how, I cannot say; but it seems to me it is "up to" our medical brethren to help us in that way rather than by criticising the cases which, coming to us too late, do not result favorably.

Dr. Gage: I am well aware that there is room for a wide and honest difference of opinion in regard to these palliative operations. In my own experience, even if immediate relief is obtained, the suffering is simply postponed, and even then the relief is very incomplete. The pain and discomfort incident to the continued pressure and extension of the disease are still very much in evidence, even if the acute obstruction is overcome.

Personally I should rather go without the operation, unless the disease could be radically removed or there was some special reason for which I wished to live a few weeks longer.

THE RELATIONS EXISTING BETWEEN RESPIRATORY AND INTRAPELVIC DISEASES.[1]

BY DANIEL H. CRAIG, M.D., BOSTON.

In 1878 Professor Skene,[9] in his inaugural address, called the attention of the New York Obstetrical Society to the very common occurrence of prolapse of the ovary, and requested the members to devote their energies to the discovery of the causes of this lesion in cases in which the cause was not manifest and in which the prolapse was unassociated with either disease in the ovary itself or uterine displacement. During the ensuing year, Drs. Mundé [12] and Goodell [13] each presented monographs upon the subject, not only considering the causes, but also the course, symptoms, diagnosis and treatment. Various authors have contributed to the subject since and practically all have quoted the list of causes as given in the above papers, and it is because I feel that I can aid a cause which will account for cases not explained by any causes mentioned heretofore that I have undertaken the work, of which I trust you will consider this as but a preliminary report.

Clinically, the condition is of immense importance, for Mundé [12] found uncomplicated prolapse in practically 10% of his cases and they are even more frequent now. In the last five hundred cases of pelvic disease personally diagnosticated I have found prolapse of the ovary to play a clinical part as follows:

Total number of cases 500.		
Cases in which ovarian prolapse was not a factor	296	or 59 %
Cases in which the uterus was retrodisplaced, the ovaries *not* being coincidently prolapsed	62	or 12½%
Cases in which retrodisplacement and ovarian prolapse coexisted	69	or 14 %
Cases in which ovarian prolapse existed with no retrodisplacement of the uterus	73	or 14½%
	500	100—

The increase of 4% in the frequency might be accounted for by the recent greater prevalence of respiratory diseases incident to the annual epidemics of influenza, which had not occurred at the time of Mundé's paper in 1879.

My attention was first directed to the relations existing between respiratory and intrapelvic lesions by the fact that patients with pelvic lesions, and especially those with ovarian prolapse, were invariably made worse and their favorable progress under treatment arrested by the intercurrence of any cough-accompanied lesion. In accordance with this conception

[1] Read before The Massachusetts Medical Society, June 10, 1903.

particular attention was given to the question of antecedent respiratory lesions in all cases in which ovarian prolapse obtained, and especially in those cases specified by Skene in which no cause was manifest. Positive histories were obtained too frequently to allow of its being considered merely coincidental. Very many histories might be adduced to substantiate this statement, but I have chosen three which seem sufficient for the present need.

CASE I. M. B. M., single, aged twenty. Never pregnant. Never any pelvic infection. For a few months acted as clerk in a drug store. For two years has been "running down." Family history strongly tubercular, but father and mother and one sister living and free from tuberculosis. Three years ago had enlarged glands removed from cervical region. Three small glands now palpable on right. Takes cold easily and always has persistent cough following each cold. Cough has at times persisted for months until phthisis was feared. About one year ago began to suffer from backache and leucorrhea and pain in iliac regions. Catamenia began at thirteen. Regular until recently. Painless. Duration five days until recently; now three or four days. Two napkins a day. No clots. Leucorrhea variable in amount and not absolutely constant. Exertion increases leucorrhea, which is then thick and yellowish. Has used douches. Not much backache now, but severe at times. Appetite poor. Digestion fair. Bowels fairly regular. Micturition normal.

Physical examination. — Chest and abdomen negative. Hymen intact but distensible. Nulliparous. Cervix long and conical. Uterus in good position, not enlarged nor tender. Some thickening of the right broad ligament. Left tube and ovary prolapsed and the ovary slightly enlarged [cystic?].

CASE II.— B. E. B. Single. Aged twenty-four. Never pregnant. Family and past history irrelevant. Catamenia began at twelve. Rather irregular, often varying between three and five weeks. In spring of three past years has menstruated every two or three weeks. Painless. Duration six to seven days, using thirty napkins, which are well saturated. Clots are frequent, their evacuation being accompanied with pain. Last April (date of history, Sept. 9, 1899) after a severe attack of la grippe, in which she narrowly escaped pneumonia, she suddenly began to feel pressure in the head, most persistent at the vertex. This vertical pain has been constant since. Worse at times. Often disturbs sleep, pain being worse at night. Can get no specific history. Paternal grandfather lived "a sporty life." Vertigo. Constant leucorrhea, sufficient at times to demand protection and of a thick, whitish character. Bowels regular. Micturition normal. General health good except that she is subject to winter cough. Appetite good. Digestion good.

Physical examination.— Thorax and abdomen negative. Perineum and cervix nulliparous. Uterus slightly enlarged and slightly back of the normal axis and decidedly tender. No discharge from os. Right tube thickened but ovary not felt. Left ovary prolapsed at side of cervix and slightly movable, being apparently loosely adherent.

CASE III. C. S. Married eleven years. Aged thirty. Has had two children and one miscarriage. Oldest child ten and the youngest three. Miscarriage resulted from a fall. First catamenia at fifteen. Always irregular, but much more regular the past two years. Duration seven to nine days. One to two napkins a day. Severely painful at times, necessitating rest in bed. Pain principally in right iliac region. Nearly constant lumbar and sacral backache, which is increased by walking and relieved by lying down. Constant but not excessive leucorrhea. Severe and frequent headaches. Bowels constipated. Micturition normal. Nervous and irritable. General health poor. Has many times feared consumption and has been almost constantly under medical care for pulmonary troubles. Has spent winters in the South to avoid lung troubles. Has raised blood at times.

Physical examination. — Lungs now clear. Heart normal. Uterus in normal axis and very little enlarged. Perineum good. Cervix lacerated, everted and eroded. Right ovary in the posterior cul-de-sac and enlarged, very tender and firmly adherent. Left ovary enlarged and soft.

These histories were chosen because in them the factors which have heretofore been most frequently assigned a causal rôle, perfectly correctly, are so markedly conspicuous by their absence. And here permit me just a word as to my position. I am not attempting to controvert the work already done on this subject, but to amplify the knowledge by the addition of one more etiological factor. Without doubt every one of the causes thus far mentioned, and especially those of Mundé [12] and the eleven enumerated by Goodell,[13] are all equally or more important.

Goodell,[15] in speaking of the causes of ovarian prolapse, summarizes his views in one terse sentence in which he says that any condition which causes a persistent congestion of the ovary should be considered a cause of its prolapse. Authors are unanimous in stating that the most frequent cause is arrest of involution post-partum, leaving the broad and ovarian ligaments in a relaxed, inelastic condition. In the above three cases, however, not one of the more active ordinary causal factors is present, and the only one of Goodell's eleven present is a lacerated cervix, which I feel sure was placed in the list mainly for the sake of completeness.

But two of these cases had never been pregnant nor infected and were virginal, showing no evidence of any form of sexual excitation. In the third no sign of subinvolution existed, any enlargement in the uterus being readily accounted for by the cervical and ovarian condition.

Study of the mechanism of cough will show that it most abundantly satisfies the causal requirements, first as to congestion and secondly, as I hope to show below, as to the force necessary to push the ovary downward. Westbrook [27] has

clearly and concisely described the mechanism of cough, and the following is an abstract of his article:

The muscles of respiration, with the exception of the diaphragm and levatores costarum, are attached to and act upon the upper ribs; the expiratory group make their principal traction upon the lower portion of the thorax. The expiratory group, in which we are particularly interested, are anteriorly and laterally the triangularis sterni above and the recti, obliqui and transversalis abdominis below. The action of the triangularis is simple and in this connection relatively unimportant. The action of the rectus is also simple. Its sole influence is to draw the sternum downward and so to diminish the size of the anterior wall of the abdominal cavity. The action of the obliqui is more complicated; their posterior portions, which pass directly from the crest of the ilium to the ribs exert an immediate and powerful downward traction upon the thoracic walls, not only diminishing the size of the lateral walls of the abdomen, but acting as adductors to the ribs, which have been put in abduction during inspiration. The more anterior portions have a crossed action and make diagonal traction across the abdomen. The upper portion of the external oblique and the middle portion of the internal oblique of the opposite side, attached as they both are to the intervening sheath of the rectus, are equivalent to one long diagonal muscle, passing from the ribs on one side to the crest of the ilium on the opposite side and capable by its contraction of drawing the ribs downward and inward so as to contribute much toward the expiratory diminution of the thoracic and abdominal cavities.

The function of the transversalis is equally important. Its middle portion is attached by strong fascia to the transverse processes of the lumbar vertebræ; while the fibers below arise from the iliac crest and outer half of Poupart's ligament. Above, it arises from the inner surfaces of the costal cartilages. The fibers of this part of the muscle pass horizontally across the abdomen and by the mutual attachment of those of the opposite sides at the linea alba, one continouus muscle is formed, the contraction of which strongly adducts the lower costal cartilages and thus diminishes the epigastric angle. The middle portion of the transversalis acts directly upon the abdominal wall. In its contraction the transversalis acts from the outer border of the quadratus lumborum, as that muscle fixes its tendons in the lumbar region. It tends first to draw the linea alba toward the fixed point; but the antagonism of the opposite side prevents lateral displacement and simply allows the anterior abdominal wall to approach the vertebral bodies, shortening the antero-posterior diameter. The muscular fibers intermediate between the anterior and posterior attachments make strong lateral compression. The lower fibers when they contract tighten the line across the abdomen and compress the intestines.

The posterior muscles are the erector spinæ, serrati postici and quadratus lumborum. When the erectores spinæ contract they draw the ribs forcibly downward toward the pelvis, lessen the transverse and antero-posterior diameters of the thorax and at the same time tend to shorten the perpendicular axis of the abdomen.

When these powerful muscles of expiration are spasmodically contracted, as in the act of coughing or sneezing, their first effect is to adduct and depress the ribs and by so doing diminish the size of the thorax in all its diameters. But as the abdominal walls only yield in the upward direction and as the contents of the abdominal cavity are practically incompressible, its roof, the diaphragm, which is relaxed during expiration, must ascend and encroach upon the thoracic space, from which air escapes, to compensate for the diminution in its size. The second effect of the expiratory contraction is to lessen the circumference of the abdomen. As the contents are incompressible and as the sphincter muscles, by their contraction, prevent the escape of the contents of the hollow viscera, the decrease in the transverse and antero-posterior diameters must be compensated for by an increase in its long diameter, another factor in the ascent of the diaphragm. Further, during the expiration of cough the glottis is partly closed, thus producing considerable resistance to the egress of the air.

Thus by making a more or less rigid walled cylinder of the abdomen, of which the top is to be elevated by internal pressure, the ascent of this top being resisted not only by gravity but also by a partial closure of the glottis, it is readily understood that the bottom of this cylinder is struck a veritable blow by *contre coup*. Speaking of this effect Westbrook says: "In the pelvis the inferior hemorrhoidal veins and those of the uterus, vagina and bladder are sometimes so turgid that slight ruptures and hemorrhages occur, particularly from the uterus, causing a bloody, serous discharge from the vagina during cough. Involuntary urination also sometimes results from the sudden downward pressure, especially in women."

Weiss [76] (*Heilkünde*, Vienna), as evidencing the expulsive power of this muscular mechanism, says: "The expelling speed of the air varies considerably. In quiet respiration it passes through the glottis at 125 cm. per second, and the pressure supports 2 mm. of mercury. During violent expiration and coughing, the pressure rises to 150 to 200 mm. and the speed is said to exceed that of the wind in a storm. It is said to be as much as 100 meters a second."

Westbrook's article was written apropos of respiratory diseases, but if it had been his desire to defend such a contention as is suggested by the present paper he could hardly have written more directly to the point.

In operating in or through the vagina no one can fail to note the marked rise and fall of the vaginal vault with each respiration, and if perchance the patient cough or vomit, the specula are not infrequently forced entirely out of the vagina. This impulse caused by cough is also plainly evident if a patient coughs during a digital examination.

Moreover the effect of respiratory influence has long been recognized in various pelvic lesions, particularly herniæ and uterine displacements, but no mention, so far as I am able to learn, has been made in connection with genuine respiratory diseases. This is true of both monographs and textbooks, both old and recent. The respiratory influence most frequently invoked is invariably a secondary one in connection with either the straining due to muscular exertion or that due to intestinal diseases. Almost every author who has written at all comprehensively of displacements of the pelvic viscera has cited straining as a cause. Yet the effect of straining on the pelvic organs is entirely respiratory, being wholly due to the involuntary holding of the breath in inspiration which invariably accompanies the muscular strain. The principal difference existing between the mechanism of strain and that of cough is in the degree of force, and that in straining the glottis is completely closed, with or without the relaxation of the sphincters.

The clinical evidence appearing so conclusive, the actual demonstration and measurement of the relation existing between respiratory causes and pelvic effects was all that was lacking. To supply, very crudely it is true, this want, I have constructed this apparatus, which, notwithstanding its humbleness, I have christened the pelvio-respirometer.

By its use I have been able to read exactly the force of the downward impact upon the pelvic structures resultant from various respiratory movements. Readings have not been made from a large number of subjects, because, as I expected, I found that the figures varied only within very narrow limits, and the readings given represent the mean average reading, with the maximum and minimum extremes only an ounce or a fraction of an ounce above or below.

Before giving the readings, however, I wish to say just a word as to what was to be expected. Many of you have undoubtedly, as I have, seen the so-called "lung-testing" machines commonly placed in public places, the dials of which show how many pounds pressure can be created by forcible expiration. All that I have seen are shamefully mendacious. The average expiratory power for an adult man is 1½ lbs. By training and special gymnastic expansion of the chest a few ounces can be gained. In the adult woman the average expiratory power is 11½ oz., the maximum personally noted being 14 oz. With this explanation I submit the readings obtained by the use of the pelvio-respirometer.

Downward pressure is produced upon the pelvic viscera as follows:

Ordinary inspiration causes a downward intrapelvic pressure of	1.85 ounces
Ordinary expiration a vacuum of	7–16 inch
Forced inspiration a pressure of	2.56 ounces
Forced expiration, a vacuum of	13–16 inch
Slight cough a pressure of	7.5 ounces
Violent (artificial) cough a pressure of	16.3 ounces
Moderate straining a pressure of	6.83 ounces
Strenuous straining a pressure of	10.95 ounces

So that the conditions might as nearly as possible simulate the ordinary conditions, these readings were all made with the patients sitting erect and with the corsets on. One other fact I wish particularly to specify; no readings have been made in cases in which a genuine hard cough due to actual respiratory lesions existed. Much as I desired to do this and also to measure the pelvic effects of sneezing, I feared to allow my enthusiasm to carry me thus far on account of the possibility of sufficient pressure being brought to bear on the fluid in the vagina to force it through the fimbriated ends of the tubes into the peritoneum. I mention sneezing because but for the trespass upon your time I should have detailed one history in which an attack of hay-fever was the direct exciting cause of the symptoms which were due to an uncomplicated prolapse of the left ovary.

The effect of genuine hard cough of bronchitis, for example, certainly far exceeds that of the counterfeit, and yet I think you will agree that a persistent repetition of such force as has been shown to be engendered in the artificial cough would be quite sufficient to in time drive the ovary down.

Moreover, a study of the topographical anatomy of the pelvic contents shows still further reason for this action of cough. Prolapse of the left ovary is slightly more common than of the right, the reason usually assigned being its greater proneness to congestion owing to its venous return circulation. This reason is undoubtedly active and is only supplemented by the relations of the sigmoid flexure as described by Deaver.[78] He says: "Normally, owing to its long meso-sigmoid, the greater part of the sigmoid is an occupant of the pelvis. *Here it lies in contact with the bladder, the uterus and its appendages,** and those coils of the small intestines which occupy the pelvis." The attachment of the sigmoid being posterior, if it is in relation with the bladder it must cross the top of the left broad ligament in an antero-posterior direction. Consider what must occur when this sigmoid is driven downward by the effects of coughing, or even straining, especially if this sigmoid is loaded, as so frequently occurs in women. But this downward impact represents only one or two equally important factors. According to Westbrook, the mechanism of cough is such as to exactly supply Goodell's one general predisposing cause, namely congestion.

We have also thus far been considering the effect of cough on normal ovaries. Consider now how much this effect is heightened in the instance of an ovary already predisposed to prolapse by pre-existing lesions. Consider, for example, its effect upon an ovary enlarged, heavy and turgid with the physiological congestion of menstruation, or enlarged and heavy from the presence of a false corpus luteum, or again an ovary but imperfectly sustained by broad and ovarian ligaments weakened by arrested involution, and does not the evidence seem conclusive?

And of all the causes of ovarian prolapse respiratory lesions are certainly amongst the most

* The italics are my own.

important. First, because in our New England climate catarrhal conditions of the respiratory tract, accompanied by more or less persistent cough, are so common as to have by familiarity bred a certain degree of contempt, especially in the laity. Secondly, because this is a cause which does not act insidiously and unsuspectedly, but frankly and openly, thereby offering the greatest possible scope for the highest attainment of medical science; namely, the prevention of disease.

But before proceeding to the consideration of the prevention of complications, I wish to offer one other suggestion. Throughout the literature of the subject I find comparatively frequent reference to congenital ovarian prolapse. My suggestion is that these cases may be better accounted for. In congenital malformations several factors generally act conjointly and it is anatomically difficult to understand how any such action can produce *downward* and backward congenital ovarian displacement. Ovaries are congenitally unquestionably displaced anteriorly, as in Engelmann's [15] cases and into hernial sacs, but where such conditions as persistence of the lumbo-ovarian ligament or the existence of the appendiculo-ovarian ligament of Clado obtain, the ovary is maintained above its normal level.

May not at least a part of these co-called congenital prolapse cases be due to the congestion and pressure effects of respiratory diseases — for example, whooping-cough — during childhood, no symptoms manifesting themselves until after the maturation of the organs?

If we grant that the above deductions are correct, at least in part, much can be done, especially in women known to be the subjects of pelvic lesions, by prompt and efficient attention to the respiratory lesions; and if for any reason it is inadvisable or impossible to inhibit the cough, much may be done to lessen its evil effects upon the pelvic viscera. And I say pelvic viscera advisedly, for while I have confined myself to-day entirely to the ovarian conditions, you can all easily see the concomitant influence on the other pelvic structures.

The prevention of pelvic complications of respiratory lesions rests not with the gynecologists but with the general practitioner, for it is he who sees the cases long before he needs to refer them to us.

The following suggestions may, with others better known to the general practitioner than to us, serve to avoid such complications:

The congestion of menstruation acting in conjunction with that of cough is always harmful and even the nulliparous should be guarded against it. As corsets lessen decidedly the normal abdominal resiliency and go far toward destroying the so-called retentive power of the abdominal mechanism, they had better be proscribed during any severe and long persisting cough-accompanied lesion, especially during the catamenia.

By requiring a patient to assume the prone position for a few minutes after a violent coughing spell, disengorgement of the pelvic vessels is favored and gravity assists the ovarian supports.

If ovarian, or pelvic, involvement is suspected much good may result from the employment of the pelvic respiratory massage as suggested by Williams. This consists in having the patient assume the genu-pectoral or knee-elbow position and aspirate the pelvic vessels by slow force-expiration about fourteen times a minute.

Complications may also be avoided in those already the subject of pelvic disease, by insistently warning them of the necessity of avoiding a cough and the importance of prompt and efficient attention should such a condition arise.

ADDENDUM.

Having pursued this study thus far, which, by the way, I consider as probably only the beginning, I naturally desired to know if the downward impact of practically one pound, as shown by the pelvio-respirometer, was really sufficient to throw the ovary down. While I do not consider my data as conclusive as yet and shall investigate the matter further, I have, since the completion of the paper, thanks to the kind co-operation of Professors Thayer, Cushing and Leary, been able to make a series of investigations on the cadaver and learn that in the dead subject a pressure of 10 oz. is sufficient to carry the fundus of the uterus to the bottom of the cul-de-sac of Douglas. A slightly greater force is requisite to so completely prolapse the ovary. It is carried down to the level of the utero-sacral ligaments by a pressure of 12½ oz. and is completely prolapsed by a pressure of 14 oz. The normal vital ligaments would undoubtedly act slightly different from those on the cadaver, but if the respective resistance imparted to the hand is of any value the ligament on the cadaver seemed much more resistant than are those ordinarily felt in operating, but of course totally lacking in resiliency.

Taking these findings as a basis, it appears that the force engendered by cough is slightly in excess of that required.

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CARCINOMA OF CHOROID METASTATIC FROM PROSTATE.

BY ALLEN GREENWOOD, M.D., BOSTON,

Ophthalmic Surgeon, Boston City Hospital.

W. G. C., age fifty-six, came to the eye clinic of the Boston City Hospital Sept. 29, 1902, and the following history was obtained:

Born in Pennsylvania. Hotel clerk.

Family history. — Mother and father dead; cause unknown. Sister alive and well.

Past history. — He entered the Boston City Hospital Oct. 9, 1901, in the service of Dr. Munro, for difficulty in urination. The records show a diagnosis of hypertrophy of prostate, with a history of difficulty of urination covering a period of ten years and for a year more or less dribbling of urine.

Physical examination at that time is recorded as follows: Obese, color fair. Pupils small, but react. Tongue clear. Heart, systolic murmur over base with aortic second accentuated. Liver palpable about two fingers below. Abdomen prominent. Temperature 100. Pulse 110°.

Rectal examination. — Flat, broad prostate, not projecting, but slightly into rectum and upper end not within reach of finger. Operation advised and refused. Taught how to use catheter.

Present history. — Four weeks ago he noticed a dimness of vision of the left eye and went to an eye clinic, where he was told that he had a retinal separation. The vision became more and more defective until a week ago, when it was reduced to light perception accompanied by severe pain in eye and all over left side and front of head. The pain was much worse at night. He also complained of great weakness and shortness of breath. Has lost sixty pounds in one year.

Examination showed a well-developed man, but poorly nourished and very anemic to the point of cachexia. Right eye normal. Left eye presented a marked circumcorneal injection, pupil widely dilated and cloudy looking, iris muddy, cornea steamy and anesthetic, and tension plus; fundus could not be seen on account of cloudy media, perception of light only. Under use of eserin and cocaine the pain and injection diminished.

On Oct. 6 I first saw the case and by that time, though the tension was still plus and the eye showed all the signs of acute glaucoma, the media had cleared enough under the eserin to allow a view of the fundus. The ophthalmoscope showed a separation of the retina in the upper temporal quadrant extending into the lower quadrant, beyond which the retina could not be followed on account of vitreous haziness. The cause of the separation could not be made out by use of the ophthalmoscope, but the clinical history of localized retinal separation, followed by acute glaucoma and accompanied by beginning cachetic condition, led me to a diagnosis of choroidal tumor, probably sarcoma, with involvement of other organs, especially the liver. The treatment of the glaucoma with eserin was continued and the patient transferred to the medical wards for observation and treatment of his general condition.

The following additional facts were taken from the medical records:

Marked arteriosclerosis. No general glandular enlargement. Mucous membrane pale. Tongue protruded straight, considerable white coat.

Thorax. — Barrel-shaped. Some prominence of lower half right. Resonance good throughout. Some slight dullness at left apex. No apparent change of vocal fremitus. Expiration prolonged.

Heart.—Upper border in third space, right 5 cm. to right, left 9 cm. to left, of mid-sternum. Sounds best heard at fifth space inside of nipple line. Sounds clear, strong through-

out, save systolic murmur over aortic area. Action regular. Aortic second accentuation.

Pulse. — Regular, fair volume and tension.

Liver. — Dullness from fifth rib, edge palpable just below costal margin in nipple line. Surface smooth. No nodules felt.

Spleen. — Not felt.

Abdomen. — Markedly scaphoid. Superficial tissue very lax. Tympanitic. No tenderness or spasm.

Genitalia. — Apparently normal.

Extremities. — Reflexes present and equal. No edema. Tibia slightly rough.

Skin. — Dry, numerous pigmental, papillary, pea-sized growths on trunk and extremities.

The day after entrance patient's temperature rose to 101.8°, but soon became normal and then subnormal.

He was somewhat stupid, but roused to answer questions. Had some diarrhea. Had some cystitis.

Four days later it was noted that he had grown more feeble since entrance. Was rapidly emaciating and was not entirely conscious. Respiration very rapid. Failed more rapidly to-day than before. Pulse failed and he died at 7 P.M.

We were fortunate in obtaining an autopsy, including removal of the left eye, section of which showed carcinoma of choroid. The autopsy was performed by Dr. E. E. Southard, whose report follows. Dr. E. E. Jack of Boston reported a case of double metastatic carcinoma of the choroid, at the thirty-eighth annual meeting of the American Ophthalmic Society, which was published in the transactions. The following summary of reported cases is from Dr. Jack's report: Up to that time, including his own, there had been twenty-nine cases reported — "twenty-three females and five males, one clinical history unrecorded. Of these nine have been double and all but one in females. In the twenty-three females the primary tumor was in the breast in twenty-one, in the lungs and pleura in one and in the thyroid in one. In the five males, stomach in three, breast in one and lung in one." The case reported here adds another to the list of males and the first one with the primary tumor in the prostate. Another unusual feature was the occurrence of acute glaucoma.

A CASE OF CARCINOSIS WITH SECONDARY NODULE IN THE EYE.[1]

BY E. E. SOUTHARD, M.D., BOSTON,

First Assistant in Pathology, Boston City Hospital.

THE present report follows a clinical report by Dr. Allen Greenwood, to whom I am obliged for a number of suggestions. To Dr. F. B. Mallory, during whose service I made the autopsy, I am indebted for aid in the report.

(*a*) AUTOPSY FINDINGS: GROSS.

The examination was made twenty hours after death.

External examination shows an elderly man of fairly strong build and good musculature. Nutrition poor. Abdomen scaphoid. Moderate sclerosis of peripheral arteries. Pupils equal, 5 mm. wide. The only external sign of tumor is a mass, egg-size, immovable, under skin of left axilla.

Internal examination of trunk shows in —

Bony thorax. — Two tumor masses. (*a*) A low mound-like prominence at back of sternum, involving lower end of body and the xiphoid attachment, 5 by 1.5 cm., well encapsulated, of rather firm consistence, of a mottled pink and gray color with miliary china-white masses starting from cut surface. (*b*) A mass, orange-size, obliterating a portion of pleural cavity at left apex, replacing a portion of third and fourth ribs and continuous with mass palpable in axilla. No evidence of encapsulation. Substance injected, darker in color than sternal mass, but of same consistence.

Abdominal walls, retracted, with thin layer of fat.

Pleural cavities. — Numerous fairly firm old adhesions over all, but thicker and firmer at summits of the many subpleural tumor masses and inseparable at the left apex.

Pericardial cavity. — Moderate amount of amber fluid. Membrane normal save for grayish-black mass, 3 by 2 by 1 cm., bulging into and covered by parietal serosa in uppermost portion of sac, well encapsulated in front by mediastinal connective tissue.

Peritoneal cavity. — Serosa mainly unaltered. Fibrous adhesions overlie many coin-sized and umbilicated tumor masses in liver. A smooth fibrous band striking across space behind bladder, bowstring fashion, shows in the middle a dark gray tumor mass, pea-size. Bladder, moderately distended, rides high in pelvis. Reduction impossible, on account of tumor in prostate and on account of the firm union of bladder wall with symphysis pubis by a flattened tumor mass, 2 cm. thick, accurately fitting but not invading the two structures.

Heart. — Weight 350 gm. Epicardium thinly underlaid with fat. Muscle of good consistence. Left ventricle 1.5 cm. thick at a point 2 cm. below aortic valve; right ventricle 0.5 cm. thick at a point 2 cm. below pulmonary valve. Fibrillæ contain no fat. Endocardium chiefly normal; the mitral valve curtain shows a few slight yellowish mounds of sclerosis. The valves measure: tricuspid, 13.5 cm.; pulmonary, 7.5 cm.; mitral, 11 cm.; aortic 8 cm. Chambers contain cruor clots.

Lungs. — Right weighs 1,050 gm., left weighs 910 gm. Both lungs exhibit everywhere nodules, sometimes ill-defined, sometimes globular and from a few millimeters up to several centimeters in diameter, often of an ash-gray color with black vascular points, sometimes darker and of a reddish tint. The surface is emphysematous and retracted, according to the site of underlying nodules, in areas 2 to 3 cm. across. Section surface firm and almost dry. Two thirds to three quarters of air space is replaced with tumor. Peribronchial lymph nodes enlarged to size of fist, but the nodal composition is preserved; from the cut surfaces start white miliary masses on slight pressure. Pigment-bearing tis-

[1] From the Pathological Laboratory of the Boston City Hospital.

sue skirts the periphery of some of the enlarged nodules.

Spleen. — Weight 130 gm. Unciform projection below 4 cm. in diameter. Capsule blue. Section surface beefy red and slightly pulpy. Trabeculæ evident. Malpighian bodies as gray points. Gastrointestinal tract normal except for nodule described above.

Pancreas normal.

Liver. — Weight 1,860 gm. Substance of a slightly yellowish brown riddled with opaque yellowish-white nodules, varying from pea- to walnut-size, globular within, superficially low and often umbilicated. Substance of the usual liver firmness; nodules somewhat firmer, in comparatively few cases centrally yellower and of softer consistence. Nodules show no trace of capsulation. The largest nodules occur toward and upon the under surface.

Gall bladder. — Bile dark. Two mulberry calculi, about 1.5 cm. in diameter.

Kidneys. — Weight 240 gm. (right 95, left 145). Strip with moderate difficulty. Interstitial pitting narrow but of fine mesh. Left kidney shows at upper pole an egg-sized, thin-walled cyst containing clear fluid. Fresh specimen shows no intra-epithelial fat.

Adrenals. — Left shows irregular distribution of medullary substance — a species of separate adrenal lying imbedded but not encapsulated in the cortex at the inferior pole.

Bladder. — Mucosa blackish, perhaps thickened, but not invaded by neoplasm.

Prostate. — If there is any normal prostate tissue, it is now indistinguishable from a firm egg-sized mass, through which probe cannot be passed or urine forced. Space between bladder and symphysis completely filled by the growth which rises just above the level of symphysis. The tissue is gray with a few vascular points and miliary whitish masses popping from section-surface. Upon the left iliac rim over iliac bifurcation is a boat-shaped mass of tissue resembling the prostate growth. Seminal vesicles and ejaculatory ducts not made out.

Aorta. — Moderate patchy sclerosis.

Organs of neck. — Trachea reddened.

Brain. — Weight 1,360 gm. Dura tense. Right side darker than left. Sinuses contain cruor clot. Dura peels with difficulty from right side. Pia of upper surface of frontal lobe replaced with a reddish-gray firm growth, 1.5 to 2 cm. thick; growth very vascular, in places hemorrhagic. The right frontoparietal region is overlaid with hemorrhage in which there may be organization or a thin layer of neoplasm. Convolutions of left side flattened, of right side marked with digitations radiating roughly from a point in the longitudinal fissure 5 cm. from anterior pole.

Eye. — The tumor occupies a spherical sector on the temporal side of the globe of the left eye. The tumor is composed of two lobes, fused at the base, and is 20 mm. by 6 mm. at the greatest width, advancing to a point 4 mm. back of the ora serrata and failing to involve the nerve head by 2 mm. The sclera is of the usual thickness on all sides and is not involved. The choroid coat merges indistinguishably into the tumor; the pigment cannot be told in color from rather wide darkened areas in the tumor considered at time of autopsy as hemorrhagic in origin.

(*b*) MICROSCOPIC FINDINGS.

Following are the microscopic findings in the main organs:

Heart. — Perinuclear pigmentation of a few fibers.

Lungs. — Pleura injected. Small interstitial collections of pigment. Capillaries everywhere deeply injected. Considerable diapedesis into many air spaces. Pigment-bearing macrophages in many air spaces. Neoplasm prominent, confined in plane of section to certain acini. The tumor spreads from space to space in continuous masses, coarsely and smoothly lobulated by the intact septa. The tumor is here and there constricted by the re-entrant septa, so that the cells become elongated and compressed. The cells are in the main oval; their outlines are indistinct except at the free border of the tumor. The nuclei are quite regularly oval or a trifle acuminate, vesicular and provided with one or more deeply staining round or oval nodes suspended at some distance from nuclear membrane by numerous chromatic threads. The nuclei often lie free in rounded spaces in the cytoplasm. At some foci the tumor breaks up into more deeply eosinophilic masses with dead-black nuclear remnants.

Spleen. — Trabeculæ and reticulum increased in amount. Capillaries packed with blood corpuscles. Phagocytes containing masses of blood corpuscles, often fused together and colored a deep brown, are prominent, apt to occur in groups, often in the adventitia of the vessels of the Malpighian bodies. Similar pigmentary masses occur in the capsule. The vessels of the Malpighian bodies frequently show hyaline changes in media.

The tumor masses are rounded and lobulated, preferring to spread through the pulp, sparing both trabeculæ and Malpighian bodies. The cells resemble those described with the lung. Masses of acidophilic débris are common inside certain lobules. Mitoses frequent.

Liver. — Section of liver with small tumor nodules.

Perilobular tissues in the main normal. A certain number of branches of portal vein are dilated by masses of cells occasionally in mitosis. A slight degree of lymphoid infiltration around the vessels containing tumor.

Capillaries filled with blood. Parenchymal cells granular and centrally or diffusely pigmented.

The tumor mass contains numerous mitoses. The individual cells resemble those described under lung; but they are grouped in smaller masses to suggest alveoli with a thin stroma. Toward periphery of nodule the thin stroma begins to contain remnants of liver epithelium. The tumor has a finely serrate edge: the tumor pre-

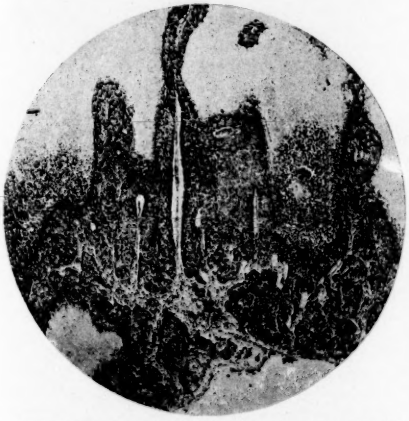
fers to invade capillaries or pericellular spaces. The portal canals are spared by the tumor and may be made out deep in the tumor mass with the portal veins containing tumor thrombi.

Kidney. — Islands of interstitial overgrowth with collections of lymphoid cells. Moderate diffuse interstitial overgrowth, well marked in pyramids. Arteriosclerosis with areas of fibrous overgrowth and atrophy of tubules in association with the vessel. The dilated tubules contain

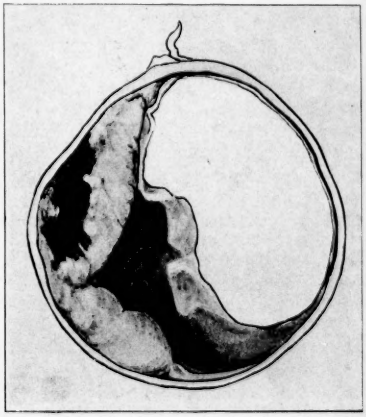
growth in the lung. The growths in the pia and in the eye must be grouped together from their tendency to the papillary form. The tendency to hemorrhage shown by the pial growth is remarkable and is probably due to local compression of the veins. Notable also is the choroidal pigment deep in the stroma of the nodule of the eye.

From anatomical and histological evidence alone, one would scarcely be warranted in assigning the prostate as the original focus of tumor

A CASE OF CARCINOSIS WITH SECONDARY NODULE IN THE EYE. — SOUTHARD.



Portion of carcinomatous nodule in the eye. Note papillary form. Intracellular pigment in stroma, *e. g.*, at base of tallest process.



Tumor occupies spherical sector on temporal side of left eye. Shown here in coronal section. Note pigmentation and detached retina.

prostate with extension into retroperitoneal pelvic tissues; carcinoma of intestine, liver, spleen, lung, mediastinum, thoracic cage, pia mater, eye; general arteriosclerosis; chronic interstitial and arteriosclerotic kidney.

Histologically the carcinoma is fairly constantly composed of —

(*a*) Smooth masses of cells having indistinct borders and a cytoplasm containing clefts or vacuoles in which lie oval vesicular nuclei with prominent nucleoli.

(*b*) A stroma varying extremely in amount from organ to organ. The minor differences are partly ascribable to locus: thus the finely serrate border found in the liver depends upon the rapid growth of the tumor in the parenchyma of that organ; with this may be compared the smooth lobular

therapy advanced in popularity, curiously enough, it was found that vibration, mechanically produced, again came forward and was received with more professional favor. It was not surprising, therefore, that at the last International Congress of Electro-Therapeutists held in Paris in July and August of 1900 — the year of the French Exposition — six instruments were there exhibited, all designed to apply mechanically produced vibration to the body. As none of these instruments were the equal in the point of merit to several upon the market of this country to-day, I will not detain you by describing their several mechanical features further than to say that they were designed and introduced by

[1] Read before the Medical Society of the Borough of the Bronx, New York, May 12, 1903.

sue skirts the periphery of some of the enlarged nodules.

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Perilobular tissues in the main normal. A certain number of branches of portal vein are dilated by masses of cells occasionally in mitosis. A slight degree of lymphoid infiltration around the vessels containing tumor.

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fers to invade capillaries or pericellular spaces. The portal canals are spared by the tumor and may be made out deep in the tumor mass with the portal veins containing tumor thrombi.

Kidney. — Islands of interstitial overgrowth with collections of lymphoid cells. Moderate diffuse interstitial overgrowth, well marked in pyramids. Arteriosclerosis with areas of fibrous overgrowth and atrophy of tubules in association with the vessel. The dilated tubules contain granular débris and ring-reticula. The epithelium is granular, the nuclei small and black or absent, the cell-borders indistinct. Glomeruli pervious.

Prostate. — The prostate tissue is ill-preserved: tumor masses, smooth, round and homogeneous in character of cells contained, lie imbedded in deep stroma.

Brain. — Section from frontal lobe with overlying tumor. Deep rounded masses of tumor cells set close with scarcely evident cell-borders interdigitate with deep trabeculæ of fibrous tissue. Nearer the cortex the true pia comes more in evidence with collections of blood corpuscles, lymphoid cells and enormous numbers of pigment-bearing phagocytes. Extreme overgrowth of subpial glia.

Eye. — Section from eye shows a tumor growth resembling that overlying the brain. The papillary masses are not so thick as in the pial growth; they grow in places, characteristically in deep, slender, fjord-like clefts. Cells containing choroidal pigment are found in the slender connective tissue stalks several millimeters distant from the choroid.

There is little differentiation of cells within the masses. The cell-borders are usually indistinct; but show in places as rounded or polygonal cells occasionally drawn into processes. The nuclei are rounded or oval, have a distinct membrane and are supplied with very distinct, rather coarsely-meshed network with several large condensed masses of chromatin. The tumor shows in places fragmentation and degeneration, in other, sometimes closely adjacent, places, many karyokinetic figures.

(*c*) PATHOLOGICAL SUMMARY AND DISCUSSION.

Anatomically the case shows carcinoma of prostate with extension into retroperitoneal pelvic tissues; carcinoma of intestine, liver, spleen, lung, mediastinum, thoracic cage, pia mater, eye; general arteriosclerosis; chronic interstitial and arteriosclerotic kidney.

Histologically the carcinoma is fairly constantly composed of —

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From anatomical and histological evidence alone, one would scarcely be warranted in assigning the prostate as the original focus of tumor formation. But the case as a whole — taken clinically as well as pathologically — seems to warrant interpretation as a case of carcinoma of prostate with multiple metastases.

MECHANICAL VIBRATION: ITS THEORY AND APPLICATION IN THE TREATMENT OF DISEASE.[1]

BY MAURICE F. PILGRIM, A.B., M.D., NEW YORK,

Professor of Psychiatry in the New York School of Physical Therapeutics; First Vice-President of the American Electro-Therapeutic Association.

In presenting briefly to you this evening the theory and application of mechanical vibration in the treatment of disease, I feel that I am not asking your attention to a new physical method of treatment so much as to the revival of an old but now greatly improved therapeutic agent.

Attempts in the treatment of disease by more or less crude and clumsy mechanical vibratory methods were made as far back as forty years ago. Little if any progress was made, however, and they received slight recognition from the profession at large. Two reasons were responsible for this: First, the treatment was applied more or less empirically and without much reference to any well-defined principles of physiology. Second, it began what little development it subsequently attained, at about the time electricity was beginning to come forward as a curative agent. Whatever virtue it may have possessed in these earlier years, was obscured by this agent, which, if not more capable therapeutically, was at least applied with more definiteness of purpose and a greater regard for those principles of physiology which then, as now, were believed to govern the functionation of the human body. But as electricity as a therapy advanced in popularity, curiously enough, it was found that vibration, mechanically produced, again came forward and was received with more professional favor. It was not surprising, therefore, that at the last International Congress of Electro-Therapeutists held in Paris in July and August of 1900 — the year of the French Exposition — six instruments were there exhibited, all designed to apply mechanically produced vibration to the body. As none of these instruments were the equal in the point of merit to several upon the market of this country to-day, I will not detain you by describing their several mechanical features further than to say that they were designed and introduced by

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eminent French electro-therapeutists, among whom may be mentioned Drs. Garnault, Boudet, Gilles de la Tourette, Larat and Gautier. Dr. Charcot had on exhibition what was known as the "Vibrating Table of Charcot and Gilles de la Tourette," which was the best instrument of its kind shown there. When a little later in this paper we come to consider what scientific mechanical vibration really is and demands, you will observe how crude even Charcot's conception of such an instrument was. Employing this instrument, the patient was placed in a chair securely fastened to the platform, and the table or platform was then set in motion, which was more or less vibratory in character. The patient was thus given a pretty powerful "shaking-up," which was not, in reality, vibration at all as it is now understood or demanded for therapeutic purposes. The idea has been worked out in this country in the instruments which are being sold directly to the public, without appealing at all to the profession for support, and which they certainly very properly would not receive. Such instruments should more accurately be called "shakers," rather than vibrators, and are susceptible of producing quite as much harm as good.

Rapid progress has been made, however, along this line until we now have manufactured exclusively for physicians' use, and sold only to them, instruments which meet the scientific demands of practitioners, one of which it will be my pleasure to exhibit and demonstrate to you this evening.

In order to rapidly canvass the subject, it may be well to consider:

(1) What mechanical vibration is?

(2) How it can be most effectively applied?

(3) What it is capable of accomplishing when so applied?

Considered in its broadest sense, vibration is the most abounding, the commonest force in the universe with which we are familiar. Hearing and sight, for example, two of the most important functions of the body, are scientifically recognized as the result of the rapid vibrations in the universal ether. Physicists say that the ether here referred to is a medium filling all space, through which the vibrations of light, radiant heat and electric energy are propagated. The nervous system — spinal and sympathetic — which dominates the entire body, responds to and requires, at times, stimulation. Aside from the source of normal or natural nerve stimuli, there are several artificial methods of supplying it. Landois and Stirling, on page 76 of their Textbook of Physiology, in referring to this subject, say:

"The following are the various kinds of general nerve stimuli, that is, modes of motion which act upon nerves: (1) Mechanical; (2) thermal; (3) chemical; (4) physiological; (5) electrical."

They add: "Nerves possess the property of being thrown into a state of excitement or greater action and efficiency by stimuli."

It is a matter of repeated demonstration, familiar to us all, that pressure (which is in reality only a modification of a blow) imparts stimulus to a nerve. For example, light pressure exerted over the pneumogastric, just above the sternum, produces a cough — the effect of reflex pressure stimulation. So, too, a sharp blow over a nerve accelerates or stimulates its action, the degree being largely governed by its length and force. If greater pressure is made, a sedative effect ensues; and if the pressure is sufficiently prolonged, inhibition results. Thus it will be seen that in the vibratory stroke mechanically produced we may get (1) stimulation; (2) sedation; (3) inhibition, depending upon its length, force and the duration of its application.

Having briefly seen what mechanical vibratory stimulation is, the second and next inquiry in this consideration is as to *how* it can be most effectively applied.

(1) As to the stroke. Whether it should be a long or a short one depends upon the depth of the location of the nerve to which the vibrating stimulus is sought to be applied. The deeper the nerve or nerve center, the greater the intensity of the physical abnormality and the more remote its location from the spinal center, the longer, proportionately, should be the stroke. Superficially located nerves or nerve areas are better treated by a short stroke; and for delicate structures like the eyeball, the short stroke should always be used. It ought constantly to be remembered that the *length of the stroke* is always of greater importance than the rapidity of the vibrations.

(2) *The treatment should be localized.* If treatment is beneficial when applied to diseased or abnormally functionating organs or their neural connections, it is illogical, to say the least, to apply it to those parts that are not so affected. The general "shake-up" of the entire organism, such as some vibration instruments are constructed to give, is neither desirable nor productive of beneficial results. Those parts alone concerned in the diseased process should be treated.

(3) Treatment should usually be applied between the transverse processes of the spinal vertebræ which are immediately over the posterior division of the spinal nerves that control directly or reflexly the nutrition of the diseased viscera or area. In some instances, as in certain conditions of the liver, for example, the vagi may require treatment, but ordinarily it should be applied, according to Bayliss and Starling (see Kirke's Physiology, page 512), to the transverse processes from the third to the eleventh dorsal inclusive. For further example, the kidneys are stimulated from the eleventh and twelfth dorsal and first lumbar. Additional information in detail respecting the spinal nerve centers influencing or controlling the various viscera may be found in Kirke's, Foster's, Landois and Sterling, the American Textbook and others of the more modern works on physi-

ology. A medium stroke, and moderately deep pressure between the processes, should be used in treating the spinal nerves. The impulse thus set up is, it is believed, conveyed towards the cord, and is communicated at the juncture of the anterior and posterior roots in the intervertebral foramen to the anterior division of the spinal nerves, and through the *rami communicantes* to the sympathetic nerves lying on the heads of the ribs.

In stimulating the lymphatics, vibration should be applied to them direct. Similarly in the case of muscular contractures. By far the greatest benefit from this treatment will be realized through its application to the spinal and sympathetic nerves or nerve centers concerned in and controlling the affected organ, and which are reached mainly through the spinal cord.

In concluding this branch of the subject, it should be remarked that every mechanical vibratory instrument, in order to produce the best possible results, ought to be susceptible of and combine three distinct features:

(1) *Easy adjustment or change of stroke;*

(2) *The localization of the treatment at a given point; and*

(3) *Absolute rigidity of action*, by which is meant that the vibrations excited by the motor should be concentrated in the vibrating attachment and so introduced into the patient's body. In many instruments, *especially those having flexible shafts*, no provision whatever is made for this, and much of the vibration produced by the motor passes either into the hands of the operator or into the floor or base upon which the instrument happens to rest. Whatever other features a vibrator may advantageously possess, those above indicated are believed to be absolutely essential to the highest success. An inefficient instrument is not cheap at any price; and here as elsewhere, the best will, in the end, be found to be the cheapest, regardless of the relative price as measured by a money standard.

We are thus naturally led up to the third inquiry of our consideration, namely: What is this mechanical stroke, or the vibrations to which it gives rise, capable of accomplishing when applied to the human body? Its effects may be *stimulative*, *sedative* or *inhibitory*.

STIMULATIVE.

(1) When applied as a stimulant to the vasomotor areas in the spine supplying particular organs, the volume and flow of blood to those viscera are thereby greatly increased.

(2) Nutritive processes are consequently improved.

(3) Secretion and excretion are also improved; elimination, the great desideratum in so many diseased conditions of the body, is also increased.

(4) Muscular and general systemic metabolism is enhanced, with greater oxidation and the production of more animal heat.

(5) Improvement in the respiratory function. (Foster, in his Textbook of Physiology, page 370, has shown the existence of a nervous center of respiration which can be reached and *stimulated through the spinal cord.*)

SEDATIVE.

Its sedative effects are marked in cases of general nervous irritability, excitability, fatigue and, very markedly, in insomnia.

INHIBITORY.

The inhibitory power of the mechanical vibratory stroke is demonstrated in the prompt relief of pain and in the dispersion of congestions or engorgements.

The foregoing enumerated effects follow (in varying degrees, of course) from the application of vibratory stimulation to the nerves of the spinal and sympathetic systems. There yet remain to be stated two of the most important physiological results that follow the application of mechanical vibration, which alone would entitle it to a high and important place in physical therapy. These are:

(1) The relief or relaxation of muscular contractures.

In such cases vibration is applied deeply to the affected muscle as well as to its spinal connections. This is done in order to directly excite or stimulate the independent nerve centers, which inhere in all muscular structure.

(2) The removal through stimulation of the lymphatics and their glands, of many forms of tumors, enlargements, exudates and other products of inflammation; also the relief of varicosities and the dispersion of many varieties of cutaneous eruption.

In the treatment of a considerable number of cases of goiter, embracing all varieties, mechanical vibration may fairly be said to have been thus far highly successful either in effecting their removal absolutely or in greatly reducing their size.

From the foregoing epitomized statement of what this therapeutic agent is capable of accomplishing, it will be observed that its range of application is very extensive and comprehensive. There is no specialty in the practice of medicine in which it may not frequently be utilized with signal advantage. For the ophthalmologist in the treatment of anemic or hyperemic conditions internally or externally, and the gynecologist in dealing with non-suppurative pelvic congestion of various kinds, as well as for all the other specialists standing intermediate to them, this therapy possesses advantages of incalculable value.

Mechanical vibration is not claimed to be a panacea, gentlemen, for all human ills. Neither is it recommended as an *exclusive* system of treatment. It is not contended that all the results above enumerated will certainly and absolutely follow its correct application to every properly selected case. It does not aspire to accomplish the indefinite postponement of senile degeneration or to abolish the process of death of the physical body.

But, gentlemen, after having critically employed it almost daily for the past eight months in clinical work,[2] which embraced all phases of diseased bodily conditions, and in large numbers, I have now to say that I know of no other *single physical agent* that will accomplish as many of the above epitomized results, or as often and with as few failures, as that concerning which I have had the honor and pleasure of speaking to you to-night.

Medical Progress.

RECENT PROGRESS IN GASTRO-INTESTINAL DISEASES.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

DIAGNOSIS OF GASTRIC CANCER.

SALOMON [1] suggests a new clinical test. This is based on the supposition that the cancer discharges a serum containing nitrogen. The patient receives liquids — milk and gruels — in the morning; from two o'clock on, a diet which is liquid but also free from albumen — bouillon, coffee, wine, tea. At nine in the evening the stomach is thoroughly washed and nothing is allowed the patient during the night. On the following morning 400 cc. of physiological salt solution are allowed to flow into the stomach, then are withdrawn, and the procedure repeated until the surface of the stomach has been thoroughly washed off. The fluid thus obtained is tested for nitrogen by the Kjehldahl method and for albumen with Esbach's test. In the majority of instances — nervous dyspepsia, chronic gastric catarrh, gastroptosis, etc. — Salomon found that the wash water gave no reaction with Esbach's reagent or only a slight opalescence. The quantity of nitrogen varied between 0 and 16 mg. nitrogen in 100 cc. of the wash water. In all cases of gastric cancer which Salomon investigated the wash water showed an intense cloudiness, quickly becoming flocculent, with Esbach's reagent. The quantity of albumen by the Esbach method lay between $\frac{1}{10}$ and $\frac{1}{4}$%. The nitrogen was also correspondingly greater, ranging between 10 and 70 mg. per 100 cc. wash water.

THE DIRECT PERCUSSION OF THE EPIGASTRIUM AS A DIAGNOSTIC SIGN OF ULCER OF THE STOMACH.

Mendel [2] calls attention to the intense pain which ulcer patients feel from the lightest percussion in the epigastrium. Such pains are apt to persist after the completion of percussion. If the outermost points of these painful zones are connected a picture of the gastric ulcer will be projected upon the abdominal wall. The pain disappears with convalescence. Likewise in duodenal ulcer there is a sharply circumscribed painful area which can be demonstrated by this method of examination. This lies alongside the linea alba just below the center of a line drawn from the costal margin to the navel. This area is a little larger than a silver quarter of a dollar and disappears as the ulcer heals.

[2] At the New York School of Physical Therapeutics.
[1] Deutsche med. Wchnschr., July, 1903, p. 546.
[2] Cit. in Cent. f. inn. Med., Aug., 1903, p. 785.

PERMEABILITY OF THE GASTRO-INTESTINAL WALLS OF CHILDREN FOR TUBERCLE BACILLI.

Disse [3] has studied the question of the permeability of the gastro-intestinal tract in young animals. He refers to the work of Römer, who showed that young colts will absorb tetanus and diphtheria antitoxins from the gastro-intestinal tract and store them up in the blood, but that they lose this power when they become three weeks old. Young rabbits react similarly. Such observations make it probable that there is some change in the epithelium of the gastro-intestinal tract as the animal grows older, and in fact this is the case. The mucus formed at birth in the epithelial cells of the stomach is small in quantity, but this increases rapidly in the first few days of life and soon approximates that of the adult. The intestinal mucous membrane of newborn animals, on the other hand, resembles that of the adult animal. V. Behring has called especial attention to the danger of infection in young animals from this lack of a mucous coating in the stomach.

Professor Disse was able to demonstrate the passage of tubercle bacilli as well as antitoxins through the gastro-intestinal tract of newborn mammals. His especial attention, however, was directed to the formation of the mucous layer in the stomach. In the adult the epithelial cells lining the stomach are divided into two layers — a basal, which is protoplasmic, granular and includes the nucleus; and a peripheral, which is homogeneous and extends to the surface and joins with that of the neighboring cells to form the mucous coating of the stomach. At birth there is also a mucous layer, but this is thin and not continuous. Before birth the cells do not show two layers, but are uniform throughout, except for a collection of granular material lying between the nucleus and the free surface of the cell. This granular material is thus wholly surrounded by the protoplasm of the cell. It takes the same stain as mucus and forms a sort of mucous plug in the cell. In the first few days of life the protoplasmic network which surrounds and separates the mucous plugs diminishes and each mucous plug spreads out until it reaches the periphery of the cell which encloses it and joins that of the neighboring cell. The coating of mucus thus formed gradually thickens, presumably requiring a longer time with large than with small animals to reach its full development. The period during which this coating is formed might be termed the critical period of the animal's existence — the time in which the animal is most liable to infection.

INSPECTION OF THE STOMACH.

Stockton [4] has very ably edited the translation of Riegel's "Diseases of the Stomach" in the

[3] Berl. klin. Wchnschr., 1903, No. 1, p. 4.
[4] Diseases of the Stomach, 1903. Riegel., p. 32.

Nothnagel series. The book is a masterpiece in itself and the American edition represents the best and latest work in this branch of medicine. The book is worth buying for the sake of Stockton's notes, a few of which we reprint. He inserts the following note on inspection:

"Inspection may be facilitated and the success of the method greatly enhanced by placing the patient upon a raised table, the head toward a window, the shades of which are so arranged that the light enters on a plane only slightly above that of the patient — the rays of light directed from the head toward the feet. Standing now toward the foot of the table, and bending from side to side, the examiner is able, by a little experience, to make out delicate shadows cast by the slight inequalities of the abdomen. These shadows are seen to move with respiration. By resorting to this method, the size, shape and position of the stomach can often be made out when ordinary methods of inspection are unsatisfactory. This maneuver is especially valuable in discovering the gastric and intestinal peristalsis, the presence of enlargements and, to some extent, the relations of the abdominal viscera. This method I have long practiced and can testify to its utility.

"Knapp has recently suggested this modification: 'With the patient placed in the position described, the observer stands at the side or at the shoulders, and brings his eyes down to the level of the abdomen, and carefully observes the respiratory waves passing over its surface. After a little experience one is able to detect delicate transverse lines or waves passing upward and downward with respiration. These lines are found to correspond with the curvatures of the stomach.'"

DEATH FROM INFLATION OF THE STOMACH WITH CARBONIC ACID GAS.

Stockton [5] reports the following:

"In the inflation of the stomach by carbonic acid gas there is an element of danger in case of ulcer, carcinoma or other disease that seriously weakens the gastric walls. It is true that accidents rarely occur, and yet caution should be practiced when the walls of the stomach are known to be diseased. Behrand and Hughes [6] report three fatal accidents resulting from the use of this method.

DANGERS IN THE USE OF STOMACH TUBES.

Stockton: [7]

"It would seem unnecessary to call attention to the dangers of using a cracked or otherwise weakened stomach tube; and yet the interesting case reported by Friedenwald [8] points out the danger of carelessness in this respect. The case was that of a colored woman, aged twenty, upon whom a quack doctor passed a defective stomach-tube, and in attempting to remove it left a portion behind. No evidence of the presence of the tube could be felt upon palpation through the abdominal wall. Upon entering the Providence Hospital, Baltimore, Dr. Harris performed a gastrotomy and removed two pieces of stomach tube, one 9¾ inches and the other 6¼ inches in length. The patient made an uninterrupted recovery."

Riegel [9] quotes a case reported long ago by Leube, but still worthy of repetition. The subject swallowed the whole tube. This was retained in the stomach for nine days, despite various efforts which were made to remove it. Finally there were "sudden nausea and a desire to cough, combined with a feeling of suffocation. The patient pushed her fingers down into the pharynx, found the sound behind the tongue and pulled it out with one jerk."

QUANTITATIVE ESTIMATION OF PEPSIN IN GASTRIC JUICE.

Many methods have been proposed in the last five years for the quantitative estimation of pepsin. These are an improvement on the simple test of the digestive action of the gastric juice, but are still unsatisfactory. The original test was performed by the addition of a small disc of coagulated white of egg to 5 cc. of the filtered gastric contents, adding, if necessary, sufficient hydrochloric acid to give a reaction for free HCl. The white of egg should be wholly digested or thoroughly disintegrated if left at body temperature for two to six hours.

Hammerschlag's method, [10] which was at one time in favor, has been superseded to a considerable extent by that of Mett. [11]

"It consists in sucking fresh egg-albumen into capillary tubes 1 or 2 mm. in diameter, coagulating the albumen by boiling, then cutting off portions, 3 to 5 cm. long, of the filled tubes, and adding these pieces of the tubes to gastric contents. The tube containing this is then kept at body temperature in the incubator for ten hours. At the end of this time each end of the tubes will show a lack of solid albumen, owing to its digestion, while in the central portion some will remain. Both the empty portions and the portion still full are carefully measured, and the activity of peptic digestion determined thereby. Borisson states that the relative amount of actual pepsin present varies according to the square of the length of the empty portion of the tube, the figures for the latter being expressed in millimeters, — that is, 3 mm. digestion equals 9 parts pepsin; 2 mm. equals 4 parts pepsin."

Mett's method in turn has been the subject of much criticism by Schorlemmer, [12] Nirenstein and Schiff [13] and Jung. [14]

Spriggs [15] bases a method for the estimation of pepsin on the fact that the viscosity of an albuminous solution decreases in the same proportion as coagulable substances disappear.

[4] Idem, p. 49.
[5] Med. News, June 14, 1902.
[7] Idem, p. 68.
[8] Amer. Med., Aug. 2, 1902.
[9] Idem, p. 68.
[10] Wien. klin. Rundschau, 1895, No. 23.
[11] Diseases of the Stomach. Riegel, edited by Stockton. 1903, p. 128.
[12] Arch. f. Verd., 1902, vol. viii, p. 299.
[13] Idem, p. 559.
[14] Idem, p. 605.
[15] Cit. in Cent. f. med. Wissen., 1903, No. 22, p. 371.

GASTRIC HYPERESTHESIA AND ITS MANAGEMENT.

Stockton [16] distinguishes the condition especially from hyperacidity. The examination of the gastric contents generally shows a diminished quantity of hydrochloric acid. Notwithstanding this fact, such patients generally feel better by the use of those means which diminish gastric acidity and prolong digestion and by the use of easily digestible substances.

CONGENITAL STENOSIS OF THE PYLORUS.

Graanboom [17] reports two cases of congenital stenosis of the pylorus. The first was a child two months old, who began to vomit, though never bile, when eight days old, and whose bowels moved only with laxatives and then but slightly. A cure was effected by washing out the stomach and diet. The stenosis, therefore, was simply a spasm. The second case, four months of age, had exactly the same symptoms, but did not yield to treatment. Operation showed a pylorus scarcely passable by a thin sound. Vomiting ceased after operation and the bowels moved naturally, yet the child died in six weeks. Autopsy revealed no reason for death. Pylorus was nearly ½ cm. thick. The writer collected eighteen cases of pure congenital pyloric stenosis. Laparotomy was performed in three instances, but in only one was it successful.

ACUTE DILATATION OF THE STOMACH.

Thompson [18] believes that a primary paralysis is the usual cause of acute dilatation of the stomach rather than an obstruction produced by the pressure of the superior mesenteric artery upon the duodenum. He shows that the situation at which the distended intestine passes into the collapsed portion is very variable. In a recently observed case the intestine was dilated for a distance of eight feet and nothing was found which could cause an obstruction.

ETIOLOGY OF GASTRIC ULCER.

Vedova [19] has produced ulcers of the stomach in fourteen dogs out of twenty-seven by resection of the celiac ganglion or of the splanchnic. The necroses, hemorrhages and ulcers were located near the pylorus in twelve of the fourteen cases and were in some instances accompanied with an excess of hydrochloric acid. The striking necrobiotic character of the microscopic appearances was noteworthy, as well as the relatively unimportant signs of reactive inflammation.

SUGAR IN THE DIET OF DYSPEPTICS.

Morgan [20] draws the following conclusions from the experiments he instituted to determine the effect of sugar on the gastric juice. Sugar in large quantities (90 gr. cane sugar, 180 gr. maple syrup) lowers the amount of hydrochloric acid and pepsin in the gastric juice of both healthy individuals and invalids. According to the results obtained in all cases, except those having achylia gastrica or chronic gastritis, it appears probable that by the addition or withdrawal of sugar the total acidity and free HCl of the gastric juice can be increased or diminished at will. The negative action of the sugar in achylic gastrica depends quite probably upon the atrophy of the mucous membrane; the unexpected increase of the gastric juice in chronic gastritis is perhaps due to the cleansing and even antiseptic action of the sugar.

HYPERACIDITY.

The above article of Morgan shows that sugar is suitable and should be useful in the dietetic treatment of excessive acidity of the gastric juice due to hydrochloric acid. It cannot be prescribed indiscriminately, but such patients usually are more comfortable when they take a cereal at breakfast and some are helped by the addition to this meal of honey or maple syrup. Fats and oils tend to diminish the secretion of HCl also, as Pawlow [21] has shown. Strauss and Aldor [22] demonstrated that fats are as well digested in hyperacidity as in subacidity. Thus by the administration of large quantities of sugar and fat to patients with hyperacidity we are instituting curative rather than palliative treatment and at the same time are building up the nutrition. Mild cases of hyperacidity are, as a rule, relieved by a glass of albumen water between meals. In severe cases, in addition to the use of cream and salads at the meals, it is often beneficial to prescribe a tablespoonful of olive oil in the forenoon, afternoon and on going to bed.

TREATMENT OF CHRONIC GASTRO-SUCCHORHEA.

Rollin [23] discusses this affection, fifteen cases having come under his care in the last sixteen months. He refers to the two classes of dietetic treatment — the administration of albuminous food in large quantities and frequently for the purpose of combining with the excess of acid secreted and thus rendering it harmless; and the other method, in which little albuminous food is given, in the endeavor by this means to stimulate as little as possible the gastric glands. The mild cases yield as a rule to either of these regulation methods of treatment. In certain severe cases of chronic gastric secretion in which the symptoms pointed to ulcer, Rollin has prescribed a rigid ulcer régime. The patient is fed only by rectal enemata for six to ten days, then gradually begins with the usual ulcer diet, but receives no meat until the end of eight or ten weeks. The symptoms cease and a cure results, as is proven by the examination of the fasting stomach.

HETEROCHYLIA.

Heterochylia is a name given by Hemmeter [24]

[16] Journ. Amer. Med. Assoc., 1902, Jan. 11.
[17] Cit. Arch. f. Verd., 1902, vol. viii, p. 671.
[18] Lancet, 1902, Aug. 2.
[19] Arch. f. Verd., 1902, vol. viii, p. 255.
[20] Idem, p. 152.
[21] The Work of the Digestive Glands. English Translation, 1902.
[22] Zeit. f diätet. u. physik. Therap., vol. i, p. 134.
[23] Berl. klin. Woch., July, 1903, p. 625.
[24] Arch. f. Verd., 1902, vol. viii, p. 75.

to a suddenly changing state of gastric secretion which occurs chiefly in nervous dyspepsia. He found, for example, in the same patient and after the same test breakfast within one week normal acidity, hyperacidity and anacidity. Einhorn described a patient with absence of gastric juice for five years, at the end of which time hydrochloric acid reappeared. Similar cases have been reported by others in nervous diseases of the stomach. Boas has noticed changes in gastric secretion in organic disease of the stomach. Kuttner observed a decrease or even absence of hydrochloric acid during menstruation. Elsner found in some cases an increase, in others a decrease of hydrochloric acid. These various reports led Korn to collect the cases of heterochylia in nervous as well as organic diseases which have occurred in Boas' clinic. In six cases with the diagnosis neurosis and two of tabes dorsalis free hydrochloric acid was present at one time, but absent on another occasion. The same alternation was present in two cases of gastric ulcer and in a case of chronic gastritis, in which was an accompanying pulmonary tuberculosis.

These facts are of especial interest because they indicate what may be the explanation of those cases in which the symptoms of the patient fail to correspond with the results obtained from the examination of the gastric contents. They show the necessity of repeated examinations of the stomach, particularly in doubtful cases. When hydrochloric acid is absent and there is a suspicion of cancer, Korn emphasizes the suggestion of Boas to examine the contents with great care for blood and to test the motor function of the stomach, which, as a rule, early suffers in cancer.

SURGERY OF GASTRIC CANCER.

Petersen [35] reports the results of thirty cases of cancer of the stomach upon which resection was performed at the Heidelberg clinic. Twelve of the patients died soon after the operation; of the remaining eighteen seven are still alive. The resection in these cases was most thorough. Petersen's statistics show that life is prolonged in gastric cancer four or five months when gastroenterostomy is performed; six to eight months by the resection of the tumor.

INTESTINAL ANTIPERISTALSIS.

Grützner, in 1894, it will be remembered, called attention to the fact that small particles of charcoal or finely divided horse hair, when saturated with physiological salt solution and injected into the rectum, could be found six hours later throughout the small intestine and even in the stomach. In the same way starch would pass from the rectum to the stomach. Essential to this phenomenon in each instance was the presence of the salt solution. Ten years before Grützner's work, Nothnagel demonstrated active antiperistaltic movements of the intestine when salt was placed on the peritoneal coat. By these experiments Grützner and Riegel also concluded that nutrient enemata were similarly moved upward through the whole intestinal tract and thus were digested and absorbed.

Hemmeter [36] has investigated this question by a series of experiments upon four healthy individuals and in a cat and white rat. The stomach was shown first to be free from the substance — raw starch — which was chosen for the enema, and the diet was such as would not lead to confusion. Twenty-five grams of starch in 200 cc. physiological salt solution were then taken by enema at 9.30 P.M. On the following morning at seven starch was found in the stomach when it was washed with 250 cc. water. Similar results were obtained with charcoal, provided that like the starch it was suspended in the salt solution. This did not take place, however, if the starch and charcoal were suspended in weak solutions of potassium chloride or hydrochloric acid. Bismuth subnitrate and lycopodium also were similarly made to pass from the rectum to the stomach, and although suspension in physiological salt solution favored this it was not definitely proven to be absolutely necessary. Fasting favored the passage upwards of these enemata; constipation delayed it as well as diarrhea. The most favorable condition was presented when the bowels moved but once a day.

Peristalsis and antiperistalsis must therefore be going on simultaneously, since the bowels were moving daily during the experiments. Hemmeter explains this by considering that one set of movements (peristalsis) is central while antiperistalsis is peripheral. By experiments on cats he gained support for this hypothesis. By means of the x-ray the movement of subnitrate of bismuth could be watched from the rectum until it could be seen throughout the whole of the abdomen, and then it was demonstrated in the stomach by Savage. On killing the animal the bismuth was found to be situated peripherally in the small intestine. Hemmeter reaches the following conclusions:

(1) A movement of small particles takes place in human beings from the rectum to the stomach. This movement is favored by the suspension in physiological salt solution, is hindered or prevented entirely when solutions of potassium chloride or hydrochloric acid are used as a menstruum.

(2) The movement is marginal, because on sections through the intestine and on autopsies on human beings the particles are only found in the periphery and close to the epithelium of the intestinal mucosa.

(3) The passage upwards of particles to the stomach goes on simultaneously with the downward passage of fecal masses.

(4) This antiperistalsis cannot move the ingesta forwards *en masse* and for this reason cannot be considered an explanation for the digestion of nutrient enemata.

[35] Die Therapie der Gegenwart., July, 1903, p. 308.

[36] Arch. f. Verd., 1902, vol. viii, p. 59.

TREATMENT OF CHRONIC DIARRHEA WITH HYDROCHLORIC ACID.

Soufrault [27] and François [28] recommend the administration of hydrochloric acid in chronic diarrhea for the reason that this is due to a too hasty evacuation of the stomach. Different experimenters have shown that the food leaves the stomach more slowly in dogs, the greater the acidity of its contents. The assumption is therefore tenable that the presence of a large quantity of hydrochloric acid prolongs the stay of the food in the stomach and allows a more complete digestion. It does not appear that the acid improves the chemical work of the stomach, but rather reflexly excites the muscular fibers and produces a stronger contraction of the pylorus, which prevents the early passage of food into the intestine.

A CASE OF ULCERATIVE COLITIS CURED BY OPERATION.

Boas [29] advised operation in a case of severe ulcerative colitis which resisted all internal treatment. An artificial anus was produced at the cecum. The large intestine was then washed out with solutions of silver and iodine. The pus and blood gradually subsided and at the end of one year the fistula was closed. A fecal fistula remained for a few months. When this closed the cure was complete. The ulcerative process completely healed and only a mild constipation remained. A similar case was reported by Steiner at the German Surgical Association in Berlin, June, 1903.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

TWENTY-SEVENTH ANNUAL MEETING, HELD AT WASHINGTON, D.C., MAY 12, 13, AND 14, 1903.

FIRST DAY, TUESDAY, MAY 12.

DR. JOHN T. BOWEN of Boston, President.

METHODS OF TEACHING DERMATOLOGY.

THIS was the title of the president's address. He stated that the didactic lecture, the clinical demonstration and the recitation all had their place in the teaching of dermatology. How much time should be accorded to each was a question about which there might be much difference of opinion and it would often have to be decided according to the resources of the department. He laid the most stress, however, upon the advantage of the method of teaching small sections of students from the patient or model and he believed that in the further development of that system lay most hope of improvement. The method required a large amount of material and a large force of instructors. With the development of section work instruction naturally became more complicated and more time was demanded of the instructors, so that the best teachers of the future would be obliged, perhaps, to sacrifice some of their private work. In the ideal dermatological department of the future it was to be hoped that the endowment would be sufficient to attract men of ability and enthusiasm to the chair, who would consider research and the teaching of their specialty their chief ends and who would be willing and able to subordinate their private practice to their vocation as teachers.

A CASE OF UNKNOWN INFECTION OF THE SKIN: POSSIBLY GLANDERS.

DR. J. A. FORDYCE of New York presented this communication. The patient was a man fifty-two years old, a native of Holland. His occupation was that of a cigar-maker. He was a very moderate drinker, but smoked heavily; he denied all venereal diseases. Five years ago he suffered from malaria and three years later from grippe and pneumonia; since then he had a slight cough at times and had lost some weight. He did not own a horse, nor had he handled horses recently, but he sometimes waited in a stable near the cigar factory if he arrived before the factory opened. He was admitted to the hospital March 11, 1903. Three weeks previous to that date, while removing ashes from the stove, he received a small scratch on the ring finger of the right hand. The wound became very painful and within a few days developed into a running sore. A few days later lesions developed on the upper lip, the right side of the mouth and on the head. When he entered the hospital he complained of weakness, chilly sensations, nervousness, headache and anorexia. The initial lesion on the ring-finger appeared as a deep, circular, fairly clean-cut ulcer, about the size of a cherry, without reddening of the surrounding skin or any evidence of cellulitis. It discharged a moderate amount of yellowish purulent material. There was a raised, irregular, confluent erosion of the skin of the upper lip, extending to the angle of the mouth and outward to the cheek for a distance of one inch. In the parietal and occipital regions of the scalp there were four large circular patches, one inch in diameter, with raised flat bases of dark brown color. Subsequently similar lesions appeared in the nose, mouth and throat, as well as on the scrotum and thigh, and death occurred on March 19, four weeks after the original infection. The autopsy, which was made by a coroner's physician, did not reveal any definite lesion to account for the man's death. The bacteriological findings were unsatisfactory, a growth of staphylococcus aureus only being obtained on the various media employed. Inoculations of guinea-pigs failed to give the characteristic reaction which was met with in glanders. Sections of the skin from the primary lesion and from secondary vesico-pustules showed the presence of an acute exudative inflammation, with evidence of hemolysis. Enormous numbers of staphylococci were present in the tissues. The infection undoubtedly occurred on the finger and rapidly spread by auto-inoculation to other parts of the skin and the mucous membranes. It dif-

[27] Cent. f. inn. Med., 1903, Feb. 7, p. 175.
[28] Bull. Génér. de Thérap., 1902, March 30.
[29] Deutsche med. Wchnschr., 1903, No. 11.

fered in its type from all the forms of infection produced by the staphylococcus or streptococcus. The negative results of the histological and bacteriological investigations left the cause of the process in doubt.

DR. HENRY W. STELWAGON of Philadelphia said the case appeared to him to be an example of one of those infections following vaccination or inoculation from an animal source.

DR. BOWEN thought the case bore a great resemblance to the acute form of pemphigus described by the French, occurring particularly in butchers and those who had to do with animal products.

DR. FORDYCE, in closing, said the case did not suggest a vaccination eruption. The lesions were very rapidly auto-inoculable.

RECENT CONTRIBUTIONS TO OUR KNOWLEDGE OF THE HYSTERICAL NEUROSES OF THE SKIN.

DR. A. VAN HARLINGEN of Philadelphia said that in a former paper, read before this Association in 1897, he reported several cases of erythematous eruptions in hysterical persons, which led to excoriations, or perhaps what might be called superficial gangrene. In a subsequent paper he attempted to collect and classify the various skin affections which had been reported as connected in some intimate manner with the pathology of hysteria. Although most of the hysterical neuroses of the skin were related to each other in their nature, yet it seemed more convenient to regard them as distinct and record them in connection with their dominant feature. Most hysterical skin affections appeared, at least at first, to be vasomotor in character. This fact had been noted by Bettmann, Perrin and other writers on the subject. Cases of hysterical gangrene showed certain characteristics common to all. The great majority, in fact nearly all of the cases, occurred in young females showing signs of hysteria, usually of a mild type. The affection frequently developed after some slight accident, a burn or some injury from a corrosive substance, a cut or a puncture. The first eruption commonly occurred at or in the immediate neighborhood of the injury, with considerable sensory irritation. A similar irritation usually introduced subsequent outbreaks. Sometimes the prodromata of gangrene were entirely absent; at other times the gangrene developed from an urticaria or erythema, or more frequently from pemphigoid blebs. Occasionally, a zosteriform eruption was the first symptom. When gangrene was established, the separation of the eschar often left an intractable ulcer terminating in a keloidal scar. While the extremities were the favorite sites of hysterical gangrene, the face and mammary region and other localities were sometimes involved, such as the external aural cavity and the mucous membranes. The question of self-infliction was of great importance in the study oft hese cases. In a few instances this had been verified and was traced to the usual causes of a desire to excite sympathy, to escape disagreeable tasks, etc., but a careful investigation into other cases failed to show the use of external applications.

RECURRENT BULLOUS DERMATITIS IN AN HYSTERICAL SUBJECT.

By DR. CHARLES J. WHITE of Boston. The patient was an American woman, twenty-three years old. She was distinctly hysterical and of a markedly neurotic and tuberculous parentage. During the past three years she had been the subject of a left-sided, recurrent, grouped, bullous dermatitis, which each year had attacked one part of the body and had, by repeated outbreaks, gradually advanced its position, each attack lasting about a week and leaving no mark behind. Dr. White said he regarded the case as an example of a rather extraordinary hysterical dermatosis. He did not see how that diagnosis could be avoided, for it seemed to him impossible to regard these one-sided, periodical, long-continued, progressive bullous outbreaks as due to the ingestion of drugs or to the infliction of self injuries and he knew of no cutaneous disease with such characteristics, outside of the mysterious dermatoses which we had learned to associate with hysteria. We could not place such an unusual group of symptoms under any of the well-recognized forms of disease, but must remain content to style it simply a cutaneous manifestation of hysteria.

DR. E. B. BRONSON of New York said that in studying these cases we should always bear in mind that in many hysterical patients there was a peculiar vulnerability or sensitiveness of the skin which was absent in the normal individual. There was no doubt that in many of these cases of dermatitis in hysterical subjects an element of deceit was present, but at the same time it took very slight provocation to produce very surprising effects.

DR. THOMAS C. GILCRIST of Baltimore said we were too apt to apply the term "neurotic" to an eruption that we could not classify or recognize its cause.

DR. F. J. SHEPHERD of Montreal said he had so frequently detected the practice of self-infliction in these cases that he was sceptical about the spontaneous origin of these gangrenous or bullous lesions. He agreed with Dr. Bronson, however, that there was a peculiar vulnerability of the skin of these patients.

Dr. WILLIAM A. PUSEY of Chicago said he was quite convinced that in certain cases of so-called hysteria we might get dermatoses that were not due to external irritation, but were dependent upon the hysterical condition.

DR. JAMES C. WHITE of Boston said he thought there was no doubt that even these deep-seated lesions of the skin, which we were prone to look upon as evidences of malingering, might occur spontaneously.

DR. VAN HARLINGEN said he had arrived at the conclusion that there were certain cases in which the eruption was the result of some internal cause and was not produced by the patient. All these cases belonged to the class of vasomotor disturbances, which embraced dermographism,

erythema, urticaria, bullous eruptions and hemorrhages from the skin.

SARCOMATOSIS CUTIS.

DR. G. W. WENDE of Buffalo reported this case. The patient was a colored woman, thirty-eight years old. The disease, resulting from an injury, made its appearance two years before her death in the form of tubercles accompanied by marked pigmentation and creating violent and persistent pain. One year later, when the lesions had attained a certain size, they broke down and this was followed by suppuration, exuberant granulations and free discharges. Microscopically, the skin tumors consisted of a round-cell infiltration, with scanty intercellular stroma. These formed nodules, chiefly in the hypoderm. The cells varied considerably in size. The disease hardly fell among those described as sarcomata, but should rather be classified, as Fuldt had suggested, among the granulomata.

FRAGILITAS CRINIUM.

DR. GEORGE T. JACKSON of New York reported two such cases. The first was in a young man of twenty-six; a clerk. The hair was thinned over the whole top of the head and was dry and lusterless. There was no sign of dandruff. The peculiar feature of the case was that there was a patch on the left side of the head, another on the right side and a third over the forehead, where the hair was short and curled up close to the scalp. These patches were sharply defined, like those of ringworm. There was no sign of inflammation. Under appropriate treatment, the patches disappeared within six months and the hair became normal in appearance. The second case was that of a lawyer, fifty-five years old, whose general health was good. His hair had been growing thin for some years. Four or five weeks ago he noticed, on combing his hair, that it was matted on the back of the head. Examination showed that on the top of the head there were two well-marked, rounded, sharply defined patches about the size of a silver dollar, in which the hair was short and apparently broken off. On the back of the head there was another patch in which the hair was broken off and curled close to the scalp, presenting an appearance similar to the curly hair of the negro. There were no signs of inflammation. The microscopical examination, made by Drs. E. Wende of Buffalo and Newborn of New York, disclosed no parasites, but showed many hairs with evidences of tricorrhexis nodosa.

AN UNUSUAL CASE OF TUBERCULOSIS CUTIS.

By DRS. T. C. GILCRIST and W. R. STOKES of Baltimore. The case was that of a colored girl who was first seen in 1894. She had cutaneous ulcerative lesions on the face, near the eye and on the nose. Sections from these lesions showed a fairly large number of apparently organized bodies, that is, they had a definite form and in some instances showed budding varieties. Most of them were situated in giant cells, but some were not. Tubercle bacilli could not be found in the tissue. Enlarged glands in the neck of the patient were removed and large numbers of similar bodies were found in them; the majority of these had undergone definite calcareous degeneration. A guinea-pig was first inoculated intraperitoneally and it died in a month. Small nodules were found in the liver. These nodules contained a large number of bodies similar to those found in the glands and skin lesion of the patient. The bodies were present in necrotic areas in the liver and there were many commencing pathogenic areas in which no bodies could be found. No tuberculosis was present in the guinea-pig. This experiment showed definitely that these bodies were not inanimate objects; otherwise, we would not get necrotic areas and such multiplication of these bodies. The death of the animal was apparently due to the presence and growth of these bodies. Further extended experiments with glands which were excised from the patient two years later did not lead to entirely definite results. Pathogenic lesions were produced in a dog and a number of guinea-pigs. In the dog, which was killed, bodies similar to those found in the patient were present in the enlarged cervical glands. A mould grew in another case and on potato a pathogenic streptococci was obtained. Nothing could be grown on any media direct from the lesions. The relapsed lesions five years later were undoubtedly tubercular, as shown by inoculation into a guinea-pig.

DR. M. B. HARTZELL of Philadelphia said the case was interesting, but he failed to see how Dr. Gilcrist had proved that it was one of tuberculosis. DR. STELWAGON agreed with Dr. Hartzell.

The PRESIDENT, DR. BOWEN, said that tissue which could not be differentiated histologically from that of tuberculosis had been shown to exist in so many different conditions that it was possible we had to deal here with a class of bodies which were perhaps degenerated elastic fibers or calcareous deposits.

[To be continued.]

Dwight's Epitome of Medical Jurisprudence. A Manual for Students and Practitioners. By E. W. DWIGHT, M.D., Instructor in Legal Medicine, Harvard University. In one 12mo volume of 249 pages. Lea's Series of Medical Epitomes. Philadelphia and New York: Lea Brothers & Co., Publishers. 1903.

This volume is one of a series intending ultimately to cover the entire field of medicine. It has been the editor's aim to provide brief manuals as contra-distinguished from mere compends. In the book before us this has been effected by amplifying the text to a certain extent and placing questions for students at the end of individual chapters. A very large number of subjects are briefly alluded to, and doubtful as we are of the ultimate value of such compendiums, we can easily see that many points of practical medico-legal interest are summarized in a way to render the book of value to students and practitioners not particularly engaged in this line of work.

THE BOSTON

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THE LONG ISLAND HOSPITAL INVESTIGATION.

LAST week an investigation before a committee of the Aldermen and Councilmen of Boston into the management of the Long Island Almshouse and Hospital was closed after a duration of nearly eleven weeks, in which twenty-two hearings were held. The investigation was extraordinary in many respects, but especially from the fact that the charges brought against the Board of Trustees having control of the institutions were made by a certain member of that board, for motives which it does not concern us here to discuss.

For the benefit of those who may be uninformed it should be known that after various vicissitudes the institution on Long Island, about six years ago, was placed under a board of seven unpaid trustees, and thereby removed from immediate political control. Two years previous to this a visiting staff had been organized, in accordance with a recommendation of a former investigating committee. The general result has been the gradual development of a well-appointed and a well-conducted hospital for chronic disease, with the essential adjuncts of such a hospital, in the way of a training school for nurses, house officers, a pathological department under a salaried pathologist and the encouragement of teaching. The visiting staff and the Board of Trustees, with the exception of the one member to whom reference has been made, have worked with complete unanimity toward this end.

The details of the somewhat farcical investigation which has been made of the institution at the instigation of this one disgruntled member of the Board of Trustees have been so widely exploited in the daily press that no description of the proceedings is required here; certain probable effects of this investigation and the facts which it brought into public view are, however, of much more than passing interest to this community and to the cause of hospital care for the chronic sick in general.

In the minds of certain physicians of this city the feeling has long been gaining ground and the conviction strengthening that both for humanitarian and educational purposes the establishment of an adequate hospital for chronic disease is a necessity. This feeling has found expression in the progressive policy of the Long Island institution, encouraged by the visiting staff and made possible by the unfaltering co-operation of the Board of Trustees, as a body. The investigation just concluded has demonstrated this, and brought into public notice, as probably could have been done in no other way, the work which has thus far been accomplished in infusing a hospital spirit into an institution which previously did not rise above the level of an almshouse infirmary. We are firmly convinced that the city absolutely requires such a hospital in the fullest sense of the word, an opinion shared by the testimony of the various physicians called as witnesses. Regarding the situation from a broadly humanitarian standpoint, we fail to see wherein the opponents of this policy gained a single point.

The keen appreciation on the part of the majority of the Board of Trustees, of the medical needs of the city, as exemplified by this institution, is worthy of special comment, and this in spite of the fact that but one of the board is a physician. Had the closing argument in the investigation by Mrs. Alice N. Lincoln, as chairman of the Board of Trustees, come from the pen of a physician it could not more clearly have expressed the aims of the medical men who have been identified with the development of the hospital idea. It was at once a vindication of the policy of the trustees and a brilliant analysis and summary of the work of the past, the needs of the present and the hope of the future. In closing her argument, Mrs. Lincoln said:

> We have told you, without exception, that the welfare of that institution is inseparably bound up with the welfare of the humblest patient who is in its charge — that the adjuncts of a hospital, which have been complained of as too costly, are really one and all for the benefit of those persons who come there for treatment, and also for the benefit of humanity at large.
>
> Why is there a training school except to care for the sick; why is there a laboratory except to study the conditions of disease and health; why are there classes of stu-

dents except to show where future study and research may aid in preventing such ills as those from which these unfortunate people are suffering? The good of the patients is the first object of a hospital, but any hospital has also an important function to fulfill toward society in extending the scientific knowledge and treatment of disease, and affording facilities for its cure.

Whatever may be the result of this investigation, and that it will have some result I am reasonably certain, it is to be expected that the public will know better than ever before what is the scope and purpose of the Long Island institution, and especially of the importance of the hospital, which, although planned and built under our predecessors, has been developed and enlarged under the present administration along precisely the lines which, as already stated, were recommended by a previous investigating committee of the city government, and which, we believe, have received the indorsement of the citizens of Boston, both rich and poor.

With these statements we are in complete accord, and it is hardly to be expected that the better judgment of the people at large, to whom the final appeal must be made, will be other than favorable toward a policy which appeals at once to our sympathy, our reason and our common sense.

AS OTHERS SEE US.

IT is apparent to any one who observes, that not only are foreigners coming among us more often for purposes of observation as well as travel, but also that their opinions of American manners and customs are finding more frequent expression in print. This is true of medicine as of other branches of knowledge. Within this year two papers have appeared in foreign journals by physicians who have recently visited America.

The first of these, by Dr. Georges Guillain of Paris, was published in the *Semaine Médicale* early this year, and concerned itself particularly with the question of instruction in neurology in the United States. Dr. Guillain made a tour of the country, including San Francisco, and wrote on his return to Paris a readable and for the most part appreciative and correct estimate of the situation in that branch of medicine in America at the present time.

More recently an excellent exposition of American methods has appeared from the pen of Prof. C. A. Ewald of Berlin in the *Berliner Klinische Wochenschrift*. As is generally known, Professor Ewald came to this country by invitation to attend the meetings of the American Medical Association and the Association of American Physicians and Surgeons. In addition to attendance at these meetings, he visited various of the more important cities of the East, and has embodied his observations in a very entertaining and genial description.

In the first place, referring to the meetings he had attended, he remarks that it is apparently the English — meaning no doubt American — custom that papers are not given extemporaneously, but are read, which he regards as a less attractive method than extemporaneous delivery, and this he finds the more remarkable, since in discussion the writers prove themselves skilled and ready speakers. With this opinion we are in hearty agreement. If men would give the gist of their contributions without being bound to manuscript copy, the interest of hearers, as Professor Ewald suggests, would be very greatly enhanced. Of the "smoker" which formed part of the congress, the following comment is made:

Nur an einem Abend fand ein sogen. „Smoker" statt, ein zwangloses Beisammensein, bei welchem für deutsche Begriffe sehr mässige Quantitäten von Bier und einer Art Bowle aus Rothwein getrunken wurden.

In speaking of the papers read in the various sections, Professor Ewald alludes to the fact that nothing is more erroneous than the generally accepted opinion that American medicine is distinguished only in certain practical surgical matters and stands behind in other lines of research. While we have for a long time been conscious that this was the fact, it is nevertheless a certain gratification to hear such an expression of opinion from a man of such wide knowledge and keen perceptions as Professor Ewald. Were others as generous and as well supplied with knowledge of the actual facts, we have no doubt that the popular and undoubtedly existing cynicism of the Germans at large toward American medicine would quickly be set aside.

Dr. Councilman's contribution to the etiology of smallpox is regarded as one of the important matters presented to the congress, and the opinion is expressed that the question of artificial products or other mistake in the interpretation of the microscopic pictures is not to be thought of. A brief, comprehensive account of the whole smallpox question is given in this connection. The comments which follow on hospitals, training schools for nurses and methods of medical education are all interesting and worthy of a detailed reading. In hospital construction, a fact which apparently was impressive was the "*himmelstürmende Bauart*" of the buildings in New York City, the reason for which he rightly interprets as the increasing value of land, a fact which necessitates that

Die Häuser in schwindelnde Höhen hinaufzuthürmen, wenn man keine Luxusbauten machen will.

Many other matters, to which space does not permit us to allude, are contained in this thoroughly appreciative description of American medicine. Professor Ewald was most naturally entertained widely in various places which he visited, and gained thereby an idea of hospitality which possibly was not his before. We, on our part, were happy in having a man of such broad sympathies and wide professional culture in our midst, who was quite able to look beyond details to the broad methods and aims of the leaders of medicine in this country. A few such men visiting our shores would quickly bring about that cosmopolitanism in medical matters which has been too slow in coming, and which is altogether to be desired for the ultimate good and progress of medicine at large.

THE AMERICAN JOURNAL OF ORTHOPEDIC SURGERY.

A SPECIAL branch of medical practice may be regarded as firmly established when it has attained to the dignity of an exclusive publication. This process has been going on with increasing activity during the last few years. We have gradually seen journals devoted to specialized branches developing and taking a definite and apparently permanent place in medical literature. Publications devoted to ophthalmology, neurology, psychiatry, dermatology and other branches have all taken their places along with the recognized journals of medical progress. The latest to join the ranks is the *American Journal of Orthopedic Surgery*, the first number of the first volume of which is now in our hands. Orthopedic surgery and the general study of the subject of orthopedics has for many years been very active, and has brought much knowledge to other allied branches of medicine. Through the energy of the members of the American Orthopedic Association this journal now appears, to be published quarterly by the association, and to replace the Transactions of the association, Volume I of the journal being Volume XVI of the Transactions.

The editorial committee is composed of Dr. R. W. Lovett of Boston, Dr. D. E. McKenzie of Toronto and Dr. H. M. Sherman of San Francisco. The first number consists essentially of papers read at the recent meeting of the association in Washington. The first is by Louis A. Weigel of Rochester, who was this year president of the association, in which, rather opportunely in so special a journal as this, he discusses the question of the family physician, the specialist and the patient. Dr. Weigel is one of those who think that specialism should be a late development from the so-called general practitioner, and upholds his contention by various arguments, which it is not our present purpose to discuss. The names of Gibney, Bradford, Blanchard, Lovett, Goldthwait, Townsend and Whitman appear as contributors to this first number, a series of names so closely identified with the progress of orthopedic surgery in this country that the suggestiveness of their papers on various technical topics needs no mention.

Following the original papers a somewhat elaborate abstract department is appended which should be of the greatest possible service. Sceptical as we are of the attempt to abstract medical literature in weekly journals, we are quite convinced that such abstracts should form a most important part of a journal devoted to a special topic. In appearance this new journal offers little in the way of criticism. We note that the paper in general is rough and attractive to the eye, but that scattered through the text, wherever illustrations demand, an entirely different type of highly glazed paper is used in order that half-tones and x-ray pictures may be more clearly reproduced. This gives a somewhat uneven appearance to the pages as one turns them, and to our mind does not add to the attractiveness of the general appearance, necessary as it may be for the reproduction of cuts. On the whole we should much prefer the entire use of a glazed paper than this combination.

While we look with a certain regret upon the multiplication of periodicals, nevertheless we must be convinced that on the whole it conduces to the further development of medicine that each department which has attained to the rank of a so-called specialty should have its own journal. We have no doubt that this admirable publication, added to the long list, will find its place of usefulness and be an organ of importance to the growing number of votaries of orthopedic surgery.

MEDICAL NOTES.

CHICAGO THE VIRILE! — Under this heading the *Bulletin* of the Chicago Health Department makes the following statement: Of all the larger cities of the country Chicago has the largest proportion of males in its total population. During the last twenty years Chicago has averaged 5.3%

more males than females, while New York has averaged 2.8% more females than males, Philadelphia 5.7% and Boston 7% more females than males. Not only this, but Chicago's male deathrate is the lowest of the four cities — Chicago, 20.5 per thousand; Philadelphia, 22.9; Boston, 23.5; New York, 27.1, being the averages of the three Federal Census years 1880, 1890, 1900.

APPOINTMENT OF DR. WILLIAM A. WHITE. — Dr. William A. White, first assistant physician of the Binghamton State Hospital, has been appointed superintendent of the Government Insane Hospital at Washington in place of the late Dr. Alonzo B. Richardson. Dr. White is but thirty-three years old.

TRICHINOSIS IN HAMBURG. — A cable despatch from Berlin reports that in Hamburg and its vicinity two hundred persons are suffering from trichinosis.

CEREBRAL MORPHOLOGY. — The following statement is made in *American Medicine*: "The autopsy on the late Dr. Laborde of Paris disclosed an interesting fact regarding the brain. Dr. Laborde was an exceedingly fluent speaker, and it was desired to ascertain if the speech center was unusually developed. The left inferior frontal convolution was found to be much larger than the right. Its volume was the more remarkable because the brain as a whole was small, weighing 1,234 gm. (41 oz.) and the convolutions in general were but little complicated." Interesting as such observations are, we cannot but regard with scepticism the statement that fluency in speech should have so direct a bearing upon the cerebral speech area. Valuable as such apparently positive evidence may be, it needs very decidedly in matters of this sort to be controlled by a study of many brains, both of fluent and of poor speakers.

A SWEET GIRL MULTIGRADUATE. — The *British Medical Journal* thus characterizes a young woman of this city: "Miss Mary C. Lowell, M.D., of Boston, is said to be the only woman in the world who is entitled to practice the professions of medicine and law by virtue of the possession of degrees in those faculties. She was the first woman assistant superintendent of the Maine State Hospital for the Insane. After holding this position for five years she visited the hospitals of various European capitals. The love of study prompted her to elect a course in law, and it is said to be her intention to obtain two more degrees — Bachelor of Jurisprudence and Master in Chemistry."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Sept. 9, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 26, scarlatina 11, typhoid fever 34, measles 4, smallpox 0.

A CENTENARIAN. — Miss Larissa Shailer, the oldest spinster in Connecticut, died at Lyme, Sept. 6, at the reputed age of 103 years. Miss Shailer was born in Haddam, Sept. 21, 1800.

ENLARGEMENT OF STILLMAN INFIRMARY. — It is stated that Harvard University has purchased a very considerable amount of land adjacent to the Stillman Infirmary in Cambridge, and that owing to the demands made upon it by students of the university it has been decided by the trustees to enlarge the present building.

LIABILITY FOR BURNING OUT OF A FUSE. — A decision of considerable practical interest has recently been handed down by the full bench of the Supreme Court of Massachusetts relative to the question of liability of a street railway company operating electric cars for the burning out of a fuse. This decision was made in two cases, in which in the Superior Court damages had been awarded. The ruling of the lower court is, therefore, sustained. More in detail the court decides that the company is liable when the fuse burning out is in an imperfect condition. It furthermore decides that the burning out of a fuse is actionable when the fuse box is so situated as to be a source of danger to passengers. It is of some interest that practically at the same time that this decision was handed down an Italian in a neighboring town, frightened by the burning out of a fuse, jumped from a moving car and was killed.

NEW YORK.

HEALTH DEPARTMENT REPORTS. — The reports of the Health Department show an exceptionally low deathrate for this season of the year. During the month of August the mortality represented an annual deathrate of 17.28 as against 19.06 for July and 18.75 for August, 1902. The corrected deathrate, excluding non-residents and infants under one week old, was 16.49. Among the diseases which showed a reduction in mortality were the following: The weekly average of deaths from diphtheria and croup decreased from 36¾ in July to 24¾ in August; the weekly

average from scarlet fever, from 11¾ to 6½; from measles, from 15¾ to 5½; from pneumonia, from 58¾ to 51½; from broncho-pneumonia, from 47 to 32; from diarrheal diseases, from 301¼ to 257¾; from diarrheals under two years of age, from 277¾ to 225; from Bright's disease and nephritis, from 95¾ to 84½; and from organic heart diseases, from 78½ to 72½. Among the diseases which showed an increased mortality were the following: The weekly average of deaths from whooping-cough increased from 4 to 9; the weekly average from typhoid fever from 13¾ to 14¾; from acute bronchitis, from 13¾ to 16½; from pulmonary tuberculosis, from 125¼ to 145¾; and from cancer, from 50½ to 52¾.

From the condensed quarterly report of the Bureau of Records of the Health Department just issued, it appears that during the three months ending June 30, the second quarter of the year, there were in the city 16,674 deaths, which on an estimated population of 3,732,903 gives a deathrate of 17.93. Comparing this with an average number of deaths for the corresponding quarters of the preceding five years of 16,642 deaths, which on an estimated population of 3,448,567 gives a deathrate of 19.40 per thousand, it is seen that there has been a lowering of almost a point and a half. The deathrate of the following diseases shows a reduction: Measles, from 0.26 to 0.19; scarlet fever, from 0.34 to 0.29; pulmonary tuberculosis, from 2.34 to 2.14; pneumonia, from 2.76 to 2.60; diarrheal diseases, from 1.06 to 0.89; Bright's disease, from 1.52 to 1.49. In the following there has been an augmented deathrate: Diphtheria and croup, from 0.64 to 0.67; typhoid fever, from 0.11 to 0.13; cancer, from 0.67 to 0.69. It will be noted, however, that these increases are very slight, while several of the reductions are quite marked.

Miscellany.

INFANT MORTALITY IN NEW YORK.

WRITING in the *Medical News* on "Infant Mortality in New York," Dr. Rowland G. Freeman reaches the following conclusions: (1) The infant mortality of all countries is shockingly high, and this is shown to be unnecessary by the fact that infants that are well cared for show a very low mortality. (2) The influences that contribute to the high mortality are defective feeding, the active cause, and heat and humidity and bad surroundings as contributory causes. (3) There has been a marked decline in infant mortality during the last ten years in the United States and especially in New York City, due, for the most part, to the decline in mortality from summer diarrhea. (4) This is due to many agencies. The general adoption of pasteurization and sterilization of milk is the most important of these. Other agencies in New York City are the improved city administration, the milk inspection of the Department of Health, the Straus Milk Charity, the fresh air work of St. John's Guild and similar charities, cleaner streets and asphalt pavements, the new small parks, playgrounds and recreation piers, improved tenements and the use of antitoxin.

HYSTERICAL FEVER.

THE existence of a pyrexial condition in association with hysteria apart from any recognizable cause for the hyperthermia has been called in question, but there are a number of carefully made observations on record which seem to establish the fact of its occasional occurrence. It is claimed that the diagnosis may be made by noting the want of harmony between the temperature and the pulse rate and respiration. Moreover, in lieu of an increased excretion of urea, this "functional" fever is marked by a diminished, which is in accord with common experience; but how can the alarming increase of lunacy during the past fifty years be accounted for? — *Medical Press.*

NEWSPAPER MEDICINE.

THE following excerpts are taken from a single daily paper, and serve to account in a measure for the prevalent erroneous popular ideas regarding medical matters:

CHICAGO MAN'S HEART MENDED. — An operation was made on the heart of M. P., who was stabbed in a fight, to save the man's life. At Mercy Hospital, where he was taken, physicians took out his heart and sewed it up. Then oxygen was administered continuously, and it was said that he had a possible chance of recovery. The wound almost cut the man's heart in two.

DR. GARTNER OF VIENNA has just patented an instrument which records the pulse of a patient under the influence of an anesthetic. The instrument is fastened to the forearm and a graduated disc records the increase or retardation of the pulse. The experiments in the hospital of Vienna succeeded marvelously. It is hoped by means of it to prevent death during operations.

SURGERY FOR CONSUMPTION. — L G. of Hampton, N. H., underwent a rare surgical operation here on Saturday at the Stamford Hospital, as a last resort for the cure of pulmonary tuberculosis. An examination revealed a large cavity in the apex of the right lung and an abscess in the upper part of the middle lobe. The physician in charge of the case was satisfied that the only chance the patient had was an operation that would establish drainage through the chest wall. On Saturday, accordingly, he resected five inches of the second rib, four and one-half of the third and four inches of the fourth. The pleura being bound down by adhesions was brought into the wound and stitched there, both cavities were located and the pleura was opened with a needle. The cavities were thoroughly cleaned and drained with a rubber tissue drainage, and the wound was closed with the exception of space sufficient for drainage. The chest wall was strapped and dressed with a dry antiseptic dressing. A complete recovery is hoped for.

The optimism of the final statements in each of these instances is not calculated to instill correct physiological ideas into the popular mind.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 29, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,257	546	37.15	9.06	2.15	20.44	1.27
Chicago . . .	1,885,000	586	219	40.26	3.75	2.05	24.22	2.55
Philadelphia	1,378,527	420	136	33.80	5.47	3.09	11.66	3 57
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	223	89	37.59	4.07	.90	15.40	3.62
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	146	—	40.40	5 48	2.74	13.70	6.16
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	71	29	38.00	5.63	5.63	21.12	1.40
Boston . . .	603,163	180	66	37.89	6.11	1.67	21.67	1.11
Worcester . .	132,044	32	12	40.62	3.12	—	28.12	—
Fall River .	115,549	39	21	33.33	12.82	—	23.07	5.13
Lowell . . .	101,959	46	28	32.61	6.52	—	28.26	2.17
Cambridge .	98,639	28	15	32.14	—	—	25.00	—
Lynn	72,497	18	6	16.67	—	—	—	5.55
Lawrence . .	69,766	26	18	53.90	—	—	42.35	—
Springfield .	69,389	24	5	20.83	8.33	4.16	12.50	—
Somerville .	68,110	18	9	38.88	11.11	—	22.22	—
New Bedford	67,198	40	20	50.00	2.50	—	35.00	2 50
Holyoke . . .	49,286	11	5	36.36	—	—	18.18	—
Brockton . .	44,873	9	3	33.33	—	9.09	—	—
Haverhill . .	42,104	14	4	14.28	—	—	7.14	—
Newton . . .	37,794	7	1	28.60	—	—	—	—
Salem	36,876	16	8	31.25	—	—	31.25	—
Malden . . .	36,286	4	0	75.00	—	—	—	25.00
Chelsea . . .	35,876	8	1	12.50	—	—	12.50	—
Fitchburg . .	35,069	12	3	25.00	—	8.33	—	—
Taunton . . .	33,656	—	—	—	—	—	—	—
Everett . . .	28,620	4	4	75.00	—	—	50.00	—
North Adams	27,862	6	—	33.33	—	16.67	—	—
Gloucester .	26,121	7	1	14.30	—	14.30	—	—
Quincy . . .	26,042	10	6	60.00	—	—	50.00	—
Waltham . .	25,198	5	2	—	—	—	—	—
Brookline . .	22,608	2	—	—	50.00	—	—	—
Pittsfield .	22,589	5	1	—	—	—	—	—
Chicopee . .	21,031	1	1	—	—	—	—	—
Medford . .	20,962	2	—	—	—	—	—	—
Northampton	19,883	4	1	—	—	—	—	—
Beverly . . .	15,302	4	4	25.00	—	—	25.00	—
Clinton . . .	15,161	7	2	14.30	14.30	—	14.30	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	6	3	33.33	16.67	—	16.67	—
Woburn . . .	14,300	2	2	—	—	—	—	—
Hyde Park .	14,175	2	0	—	—	—	—	—
Adams . . .	13,745	2	—	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	7	5	57.20	—	—	42.90	—
Melrose . . .	13,600	5	—	40.00	—	—	—	—
Westfield . .	13,418	6	3	16.67	16.67	16.67	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,732	3	1	33.33	—	—	33.33	—
Framingham	12,534	4	1	50.00	25.00	—	25.00	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	4	1	—	25.00	—	—	—
Weymouth .	11,344	3	1	33.33	—	—	33.33	—
Southbridge .	11,268	5	2	20.00	—	—	20.00	—
Watertown .	11,077	1	—	100.00	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,342; under five years of age, 1,343; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 1,234, acute lung diseases 211, consumption 280, scarlet fever 21, whooping cough 30, cerebrospinal meningitis 12, smallpox 19, erysipelas 8, measles 9, typhoid fever 72, diarrheal diseases 652, diphtheria and croup 71.

From whooping cough, New York 8, Chicago 4, Philadelphia 5, Baltimore 3, Pittsburg 6, Lynn, Newton, Everett and Quincy 1 each. From erysipelas, New York 6, Chicago 1, Pittsburg 1. From smallpox, Chicago 2, Philadelphia 4, Pittsburg 13. From scarlet fever, New York 6, Chicago 5, Baltimore 4, Boston 1, Fall River 1, Lawrence 1, New Bedford 2, North Adams 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Aug. 15 the death-rate was 15.7. Deaths reported, 4,544; acute diseases of the respiratory organs (London) 120, whooping cough 63, diphtheria 59, measles 91, smallpox 5, scarlet fever 33.

The death-rate ranged from 6.9 in Reading to 28.9 in Birkenhead; London 14.2, West Ham 12.8, Brighton 10.8, Portsmouth 12.8, Southampton 12.3, Plymouth 15.8, Bristol 11.5, Birmingham 17.3, Leicester 14.0, Nottingham 14.4, Bolton 21.4, Manchester 20.7, Salford 21.6, Bradford 14.2, Leeds 18.9, Hull 20.1, Newcastle-on-Tyne 18.8, Cardiff 10.3, Rhondda 13.9, Liverpool 21.2, Burton-on-Trent 13.2, Bootle 27.5.

METEOROLOGICAL RECORD.

For the week ending Aug. 29, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	We'th'r * 8.00 A.M.	We'th'r * 8.00 P.M.	Rainfall in inches.
S . 23	29.81	75	85	65	61	39	50	E	W	10	8	C.	F.	0
M . 24	29.96	66	70	62	64	75	70	N	E	9	4	F.	C.	0
T. 25	29.88	60	63	57	89	97	93	W	N E	5	8	O.	O.	.69
W . 26	29.98	59	62	56	94	89	92	N	S E	10	4	O.	O.	T
T. . 27	30.07	62	68	57	77	77	77	N	S	8	5	F.	O.	0
F. . 28	30.13	64	68	59	86	63	74	S	S E	3	8	O.	O.	0
S. . 29	30.16	60	62	58	86	91	88	E	N E	20	12	R.	O.	.13
☞	30.00		68	59			78							.73

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

RECENT DEATHS.

ERNEST F. ALEXANDER of Hoosick Falls, N. Y., a veterinary surgeon widely known in the section where he resided, died on Sept. 4, at the age of forty-two. He was a native of England and was a graduate of Toronto College, Canada.

THE death is reported at Herrinalb in the Würtemburg Black Forest, on Aug. 16, of DR. JOSEPH SCHNETTER, who was for forty years a practising physician in New York City. Dr. Schnetter was eighty-one years old. He was born at Gerdzheim, Bavaria, and was graduated with honors from the University of Würzburg. He came to this country in 1849, and later became one of the most distinguished and prominent German physicians in New York. There he was one of the founders of the German Hospital and Dispensary, which is now a large and flourishing institution. A few years ago he retired from practice on account of failing health and went back to Germany, where he has since resided in the city of Karlsruhe.

DR. EMILY R. ROBBINS, said to have been the first woman medical practitioner in America, has recently died in Philadelphia. She was born in that city seventy-one years ago and was graduated from a Pennsylvania medical school in 1857. Later she married a physician, and during the war rendered valuable services in caring for the wounded soldiers who were taken to hospitals in her native city.

BOOKS AND PAMPHLETS RECEIVED.

The Medical Epitome Series. Medical Jurisprudence. A Manual for Students and Practitioners. By Edwin Welles Dwight, M.D. Series edited by V. C. Pedersen, A.M., M.D. Philadelphia and New York: Lea Brothers & Co. 1903.

The Practical Medicine Series of Year Books, comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the general editorial charge of Gustavus P. Head, M.D. Vol. VI. Chicago: The Year Book Publishers. May, 1903.

On Syphonage and Hydraulic Pressure in the Large Intestine with their bearing upon the treatment of Constipation, Appendicitis, etc. By Ralph Winnington Leftwich, M.D. Illustrated. New York: William Wood & Co. 1903.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. VIII. Washington: Government Printing Office, 1903.

A Reference Handbook of the Medical Sciences, embracing the entire range of Scientific and Practical Medicine and Allied Science. By various writers. A new edition, completely revised and rewritten. Edited by Albert H. Buck, M.D. Vol. VI. Illustrated. New York: William Wood & Co. 1903.

Tumours, Innocent and Malignant. Their Clinical Characters and Appropriate Treatment. By J. Bland-Sutton. Third Edition. Illustrated. Chicago: W. T. Keener & Co. 1903.

Organic Nervous Diseases. By M. Allen Starr, M.D., Ph.D., LL.D. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1903.

The Erotopath in Society. By Charles H. Hughes, M.D., of St. Louis, Mo.

Original Articles.

THE ILL HEALTH OF FRANCIS PARKMAN.

BY GEORGE M. GOULD M.D., PHILADELPHIA, PA.

Boyhood. — Francis Parkman was born Sept. 16, 1823, in Boston, of the best New England ancestry. Farnham says that the tragic element in his life was probably as much the result of ignorance as of inherited weakness. As to "inherited weakness," one cannot inherit from ancestors what they have not, and there is not a hint that I have been able to discover which shows that Parkman's parents or grandparents had any of the physical troubles which made him suffer so grievously during his entire life. In his autobiographic letter he says of himself that his childhood was neither healthful nor buoyant, and that for a time though active he was not robust. Farnham says he had a delicate and sensitive physique, and was therefore sent at the age of eight to his grandfather's farm at Medford, Mass. Speaking of himself, Parkman says:

"I walked twice a day to a school of high but undeserved reputation, about a mile distant in the town of Medford. Here I learned very little, and spent the intervals of schooling more profitably in collecting eggs, insects and reptiles, trapping squirrels and woodchucks, and making persistent though rarely fortunate attempts to kill birds with arrows." Farnham adds that the woods, indeed, were so seductive as to be responsible for considerable truancy on his part, and some consequent fibbing. Those years at Medford were counted among his happiest, for the manifold interests and activities of country life were very congenial to his tastes.

"The causes of his early illnesses are enveloped in more or less mystery," says Farnham. "He was a headachy boy," Miss Parkman thinks,[1] and this illuminative remark, incidentally made, when coupled with the entire subsequent history of Parkman's life, hints at the key which unlocks the doors of the mystery. Boys of good stock and habits do not have headache except for good and sufficient reasons. When they live in the country and play truant, etc., as this boy did, the truancy is likely to be due to the unconscious desire to avoid headache. In such cases, as good oculists well known, the headache is most likely due to eyestrain. Reading thus between the lines, the oculist who remembers a large number of cases in his private practice of similar development in boys will also be struck by the likeness of essential psychologic conditions in the lives of the youth time of De Quincey and of Darwin. The erudite boy De Quincey was driven by the unconscious discomfort felt in study to years of vagrancy in the Welsh hills and elsewhere, and the intellectual son of intellectual parentage, Darwin, made his father despair by his addiction to "shooting, dogs, and rat catching." These and numerous instances in my practice have led me to formulate a rule as to the "truancy" and "play" and "athletics" of boys naturally intellectual, but who show a strangely illogic tendency to avoid all study of a severe or continuous kind. They will not and of course cannot explain it, but they will not read and study, and at once upon the application of spectacles correcting the ametropia which made study result in suffering or unconscious irritability, these "obstinate" and "wild" boys lead their classes and become men of learning or intellectual power.

[1] Personal communication. From the age of twelve (he being then twenty-one) his sister was his almost constant assistant and companion. (Since this was in type Miss Parkman tells me there is some doubt in her mind or in that of her sister as to the fact of headache in boyhood. It is not of much import. Boys with eyestrain usually avoid headache by avoiding reading and writing.)

"At the age of eleven or twelve," writes Parkman of himself, when he was forty-five, "he conceived a vehement liking for pursuits a devotion to which at that time of life far oftener indicates a bodily defect than a mental superiority. Chemical experiment was his favorite hobby, and he pursued it with a tenacious eagerness which well-guided would have led to an acquaintance with the rudiments of the science, but which in fact served little other purpose than injuring him by confinement, poisoning him with noxious gases, and occasionally scorching him with some ill-starred explosion." "Baneful to body and mind," he again pronounces this interest in chemistry.

During the years from thirteen to seventeen we infer that he was attending school in Boston at the Chauncy Hall School. We do not hear that he was studious, and all hints show that both before and after this he was far from being so.

The age of fifteen or sixteen produced a revolution. At that momentous period of life retorts and crucibles were forever discarded, and an activity somewhat excessive took the place of voluntary confinement. A new passion seized him, which, but half gratified, still holds its force. He became enamored of the woods, a fancy which soon gained full control over the course of the literary pursuits to which he was also addicted.

The college student. — He entered Harvard College in 1840. His biographer says he devoted himself with ardor to his special interests — the study of rhetoric and history, the pursuit of physical development and a knowledge of the American wilderness. How great, or rather, how little was his ardor for book study, may be gathered from the statement of his friend Mr. Wheelright concerning his social and student life at college:

He was very little in his own room, except at night for the purpose of sleeping. His constant craving for bodily exercise kept him out-of-doors or at the gymnasium the greater part of the day.

He now began, on entering Harvard, a course of physical training, by which he hoped to acquire the utmost strength, agility and endurance. . . . He took long walks at a pace his companions found it hard to keep up. . . . . One of his strongest characteristics, a love of stir and movement, pushed him to excessive activity. (Farnham.)

Parkman says of himself that he formed the plan of devoting himself to history-writing at the age of eighteen, and that to prepare himself "he entered upon a training tolerably well fitted to serve his purpose." One at first smiles at finishing this sentence describing this training — "slighted all college studies which could not promote it, and pursued with avidity such as had a bearing upon it, however indirect." Parkman himself continues:

His reliance, however, was less on books than on such personal experience as should in some sense identify him with his theme. His natural inclinations urged him in

the same direction, for his thoughts were always in the forests, whose features, not unmixed with softer images, possessed his waking and sleeping dreams, filling him with vague cravings impossible to satisfy. As fond of hardships as he was vain of enduring them, cherishing a sovereign scorn for every physical weakness or defect, deceived, moreover, by a rapid development of frame and sinews, which flattered him with the belief that discipline sufficiently unsparing would harden him into an athlete, he slighted the precautions of a more reasonable woodcraft, tired old foresters with long marches, stopped neither for heat nor rain, and slept on the earth without a blanket.

During his college course he spent his vacations in long trips to the wilds of New England, in 1841 to Portsmouth, Lake Winnepesaukee, Mt. Washington, etc., to the Androscoggin and Magalloway rivers. In 1842 a similar trip was made, and in 1843 one to Canada for historical materials, examining battlefields, etc. His physical condition and athletic powers were so well known that it was a surprise to his friends when in his junior year (1843) he gave up his studies and went to Europe "for his health." "Nothing," says Farnham, "very definite is known of the cause of this sudden change. Some think it was a trouble with his eyes, but there is no reference to this in his diaries and the few letters he wrote. It was probably, as others intimate, with apparently better knowledge, a trouble of the heart resulting from overstrain in the gymnasium at Harvard." [2] Parkman sailed in September and — a side light on the rigor of college courses and discipline at that time — he returned in time the next year to be present at the graduation exercises.

As a law student. — Graduated in 1844 by Harvard, he at once entered the Law School, and received the degree of Bachelor of Laws in 1846. He never entered the bar, and judging from the hints given we may suppose his teachers and examiners were as lenient as they had been in the classical department. Of this period Parkman says:

> "While following the prescribed courses at a quiet pace, I entered in earnest on two other courses, one of general history, the other of Indian history and ethnology, and at the same time studied diligently the models of English style, which various pursuits were far from excluding the pleasures of society."

When a student in the law school, he joined a class in riding under the instruction of a circus manager. With his chivalric and spirited temper he must have taken great pleasure in this knightly exercise. He chose the hardest horses, practiced riding in every form, with or without a saddle or stirrups; could run, leap, jump on a charger at full speed — in short, perform feats which only a "professional" could execute. In this study he probably had in view his "Oregon Trail" trip, which occurred soon after. If our athletic games had then been in vogue, his skill, courage, coolness and activity would have made him a successful competitor. (Farnham).

"The first trouble of which we have any definite knowledge," says Farnham, "was the beginning of an affection of the eyes." This extremely indefinite "definiteness" is further described as follows: "During his first year at the Law School, 1844–45, he rose very early and studied by candle light, often without a fire. In the course of the next winter, when confined to the house by some sickness, he, for the first time, pursued his studies by listening to reading." The journeys undertaken during his law course are epitomized by Farnham and show the fiery energy that drove him over so much of the country.[3]

"'*The Oregon Trail*,'" writes Farnham, "was undertaken partly to cure his eyes, partly to study Indian life." His friend Shaw and himself left St. Louis April 28, 1846, "on a tour of curiosity and amusement," quoting Parkman. In the preface of the book, written in 1872, he says:

> As regards the motives which sent us to the mountains, our liking for them would have sufficed; but, in my case, another incentive was added. I went in great measure as a student, to prepare for a literary undertaking of which the plan was already formed, but which from the force of inexorable circumstances, is still but half accomplished. It was this that prompted some proceedings on my part, which, without a fixed purpose in view might be charged with youthful rashness. My business was observation, and I was willing to pay dearly for the opportunity of exercising it.

At Fort Laramie he was taken down with dysentery, and says of himself in the "Oregon Trail":

> I had been slightly ill for several weeks, but on the third night after reaching Fort Laramie, a violent pain awoke me, and I found myself attacked by the same disorder that occasioned such heavy losses to the army on the Rio Grande. In a day and a half I was reduced to extreme weakness, so that I could not walk without pain and effort. Having within that time taken six grains of opium without the least beneficial effect,[4] and having no medical adviser, nor any choice of diet, I resolved to throw myself upon Providence for recovery, using without regard to the disorder any portion of strength that might remain to me. So on the 20th of June we set out from Fort Laramie. Though aided by the high bow "mountain saddle" I could scarcely keep my seat on horseback.

Another quotation from the "Oregon Trail" goes into further details of his condition:

> "At this time I was so reduced by illness that I could seldom walk without reeling like a drunken man, and when I rose from my seat upon the ground the landscape suddenly grew dim before my eyes, the trees and lodges seemed to sway to and fro, and the prairie to rise and fall like the swells of the ocean. . . . I tried repose and a very sparing diet. For a long time, with exemplary patience, I lounged about the camp, or at the utmost staggered over to the Indian village, and walked faint and dizzy among the lodges. It would not do; and I bethought me

[2] The gymnasium was established in his junior year.

[3] The vacations of the year he devoted to historical research. Taking his rifle, he tramped alone over the hills of western Massachusetts, to study the routes followed by the French and Indians in their attacks on that region. He passed through Springfield, Cabotville (old name of Chicopee), Chester Factory, Lee, Stockbridge, Great Barrington, Mount Washington, Lebanon Springs, Stephentown, the Hopper and North Adams.

The diary of 1845 shows that he had now focused his ambitions on a definite work —the "Conspiracy of Pontiac." In April of that year he made a trip to St. Louis and spent the summer in collecting materials for this volume. He visited Lancaster, Paradise, Harrisburg, Williamsport, Trout Run, Blossburg, Corning, Seneca Lake, Rochester, Buffalo, Detroit, Windsor, Sandwich, Mackinaw, Sault Ste. Maris, Palmer, Newport, Niagara, Oswego, Syracuse and Onondaga Castle. In all these journeys he showed indefatigable energy and alertness, and while his main interest was historical research, in which pursuit he noted the scenery of historic places, examined family papers and other documents and wherever it was possible interviewed descendants of the actors in his historic drama, his diary reveals almost as much of interest in nature, human nature and civilization. The sketches he contributed to the *Knickerbocker Magazine* show something of these tendencies crystallized in literary forms. In the winter of 1846 he made a trip through Pennsylvania, visiting Trenton, Philadelphia, Washington, Baltimore, Harrisburg, Carlisle, Chambersburg and Pittsburg. This year is marked also by his most adventurous and important expedition, the trip of the "Oregon Trail."

[4] This part of this sentence is oddly omitted in my copy of the "Oregon Trail," preface of 1872.

of starvation. During five days I sustained life on one small biscuit a day. At the end of that time I was weaker than before, but the disorder seemed shaken in its stronghold and very gradually I began to resume a less rigid diet."

He soon recovered and wrote that, "hardship and exposure had thriven with me wonderfully. I had gained both health and strength," and was "in high spirits." He had some relapses at a later date, but soon gained rapidly, ate well and went out hunting for sport, etc.

In his autobiographic letter, written years afterward, he speaks as follows of his life with the Indians:

> On a journey of a hundred miles over a country in parts of the roughest, he had gained rather than lost strength, while his horse was knocked up and his companion disconsolate with a painful cough.

The long and exhausting buffalo hunts toward the end of the trip, for the fun of the thing, and the homeward journey down the Arkansas Valley, show how strong and essentially unharmed he really was in health. Of another he wrote, "He was complaining that night of a disease the wasting effects of which upon a younger and stronger man, I myself had proved from severe experience." [5]

I have felt it necessary to quote so fully concerning the "Oregon Trail" trip, because Mr. Farnham, in ignorance of the real pathogenic condition, has in his comments put the matter in a wrong light. He says that "his mind at times lost its clearness." "The prolonged and excessive strain of the journey permanently impaired his digestion, thus reducing his powers to resist the development of disease. In this way the Oregon trip was the immediate cause of his infirmities, though some of them may have had their source in heredity." Farnham indeed suggests that his lifelong insomnia was due to this journey, and that "inflammation and weakness of the eyes naturally increased with the decline of his general health on the Oregon trip." Finally Farnham says that the "Oregon Trail" trip thus cost Parkman his health for life.

Farnham here repeats the same error as was exposed in a previous study of Darwin, concerning the effects of the Beagle voyage. As Darwin returned from the voyage unharmed, sound and healthy, so Parkman came home from the Oregon trip essentially without any permanent injury. His subsequent ill-health had nothing whatever to do with the hardships and temporary intestinal troubles of the outing among the Indians. "The sport," says Parkman, "was good, and the faith undoubting that to tame the devil, it is best to take him by the horns." The cause of all his succeeding illness (except of course the arthritis and rheumatism that came on later) was not suspected by himself or his biographer. This was eyestrain, which played no part during his Oregon journey, but which began its dominating influence at once upon his return to civilization, and made every day of his after life the supreme concern and every hour one of hidden suffering.

To the alertminded reader it will have become apparent that the school truancy, the interest in chemistry, the woods-roaming, the furious athleticism, the trip to Europe, the early choice of the peculiar historic subjects upon which to write — all were proofs only of a strange though unrecognized suffering when he wrote or read. The Oregon journey, itself preceded by the thousand-mile tramps and wanderings, were upon any other supposition strangely illogical. Parkman bravely convinced himself they were necessary to his preparation as a historical writer. But what a pitiable means to the end! It is plain that it was all but a powerful and subtle reaction against the ocular and cerebral injury wrought by the impossibility of visual labor with pen and type. There is, indeed, a large and hidden wisdom of the organism, a fused forefeeling and unconscious determination of the psychic and biologic personality which steadily and determinedly does the best it can with the condition at hand, the inherited tastes and abilities and the forelying circumstance or necessity of life. The youth and the entire life of Parkman, willed and potent as he was, is an illustration of how little the most dictatorial "environment" could conquer or long influence the more dominating temper of his character. Fate made him a true Yankee, and demanded his employment with intellectual and even with literary matters. It also gave him eyes that in any other man in the world would have rendered his living resultless to the world, and every hour a torture to himself. The torture he knew not how to escape, but he wrung from the bitterest suffering and the most unpitying fate great results for the world.

In spite of the fact that during his early years he was a wood-roamer, and even made commendable natural history collections, he was no scientist, and however ardently and arduously he prosecuted tree lore or animal study, or later chemistry, and still later horticulture, it is perfectly evident that his title rôle was not as scientist. He was cast by God for another part, and his soul's eye was set upon another ideal. He filled the small rôles as well as he could, but why he played them at all, and why he soon wearied of them, this is explained only by the fact that injury to eyes and the nervous system was unconsciously felt whenever he used his eyes in protracted reading and study. Hence he was driven to muscular activity, and being an intellectual man he could but choose the sole outlets for energy which united action and thought. The restless demon that from the depths of great men's souls ever cries out, *March, march!* begins his orders even

[5] Approaching St. Louis an incident occurred which must be quoted in full: " . . . Dr. Dobbs is there besides. I asked who Dr. Dobbs might be. 'One of our St. Louis doctors,' replied Tête Rouge. For two days past I had been severely attacked by the same disorder which had so greatly reduced my strength when at the mountains: at this time I was suffering not a little from pain and weakness. Tête Rouge in answer to my inquiries, declared that Dr. Dobbs was a physician of the first standing. Without at all believing him, I resolved to consult this eminent practitioner. He offered in his own person but indifferent evidence of his skill, for it was five months since I had seen so cadaverous a face. . . . I said I had come to ask professional advice.

"'Your system, sir, is in a disordered state,' said he, solemnly, after a short examination.

"I inquired what might be the particular species of disorder.

"'Evidently a disordered state of the liver,' replied the medical man; 'I will give you a prescription.' . . . He presented me with a folded paper. 'What is it?' said I. 'Calomel,' said the doctor.

"Under the circumstances I would have taken almost anything. There was not enough to do me much harm and it might possibly do good; so at camp that night I took the poison instead of supper.

in boyhood. In Parkman's case it was a very literal command, iron and uncompassionate. The order had been obeyed from early boyhood on, and by eighteen he found that he could "march" and be an intellectual and creative man at the same time, only by taking as his life work the peculiar kind of historical writing which demanded or seemed to demand many extensive journeys and original research not solely of a bookish kind. This decision and the theme of his work were of course consonant with the character of the man, but had it not been for his unrecognized although active ocular affliction, the peculiar choice would not have been made. This comes out in Parkman's graphic account of the conditions of his mind and life in which he speaks of the result of his strenuous efforts as culminating in

> A state of mental tension, habitual for several years, and abundantly mischievous in many respects. With a mind overstrained and a body overtasked, he was burning the candle at both ends . . . a pernicious intensity . . . a highly irritable organism spurred the writer to excess in a course which with one of different temperament would have produced a free and hardy development of such faculties and forces as he possessed. . . . Soon, however, he became conscious that the impelling force was growing beyond his control. Labor became a passion and rest intolerable, yet with a keen appetite for social enjoyment, in which he found not only a pleasure but in some sense repose, the stimulus rapidly increased. Despite of judgment and of will, his mind turned constantly towards remote objects of pursuit, and strained vehemently to attain them. The condition was that of a rider whose horse runs headlong, the bit between his teeth, or of a locomotive, built of indifferent material, under a head of steam too great for its strength, hissing at a score of crevices, yet rushing on with accelerating speed to the inevitable smash.

There is in these lines, as in everything written by Parkman about himself, a startling clearness of spiritual diagnosis, a truthfulness of view as to the facts and symptoms, and a most tragic failure to catch a glimpse of the pathologic condition that caused them. How near the eye came to seeing itself is shown by this swift glance:

> It was impossible that conditions of the nervous system, abnormal as it had been from infancy, should be without their effects on the mind, and some of these were of a nature highly to exasperate him. Unconscious of their character and origin, and ignorant that with time and confirmed health they would have disappeared, he had no other thought than that of crushing them by force, and accordingly applied himself to the work.

How little they did or could have "disappeared with time and confirmed health" we now know, and as his whole after-life proved, only science makes it possible for the eye to see itself.

Parkman's rigorous athleticism. — We have seen that Parkman seemed to be impelled to an extreme of athleticism by some illogical and half-unrecognized impulse. Farnham says of Parkman that

> His chief error was the not uncommon mistake of regarding exercise as the all-sufficient means of securing health. While developing his muscles he failed in the larger duty of acquiring a thorough knowledge of the laws of health. His physical culture had as close a connection with his personality as any other part of his education. His tastes and ruling traits pointed in advance to his course and the dangers he would be likely to meet. Early in his life muscular development became his hobby; he desired to equal the Indian in strength, agility, endurance and skill in woodcraft; he also became convinced that a healthy mind could exist only in a healthy body. But in pursuing these laudable aims he was exposed to many risks. His self-discipline began when he was yet a boy at home; he would not permit himself habits or thoughts tending in the least to weaken the central virtue of manliness. . . . Thus the ways of the prudent, complaining and self-indulgent invalid were to him worthy only of contempt. He himself, going to the other extreme, drove his body to exercise with an excessive and destructive ambition. He treated his infirmities by the fatal method of "crushing them by force," attaining almost a savage's endurance of pain. If the strongest mind, bent on attaining health and ignoring illness, were able to cure disease by will power, Parkman should have been the healthiest of men.

Concerning this aspect of his life, Parkman wrote of himself:

> But if a systematic and steady course of physical activity can show no better result, have not the advantages of such a course been overrated? In behalf of manhood and common sense, he would protest against such a conclusion; and if any pale student, glued to his desk here, seek an apology for a way of life whose natural fruit is that pallid and emasculate scholarship of which New England has had too many examples, it will be far better that this sketch had not been written. For the student there is, in its season, no better place than the saddle, and no better companion than the rifle or the oar. A highly irritable organism spurred the writer to excess in a course which, with one of different temperament, would have produced a free and hardy development of such faculties and forces as he possessed. Nor, even in the case in question, was the evil unmixed, since from the same source whence it issued came also the habit of mind and muscular vigor which saved him from a ruin absolute and irremediable.

In the words "a highly irritable organism spurred to excess," Parkman, with his usual precision, stated the facts without, of course, knowing the reason, or understanding why he had the "highly irritable organism." As an echo of this diagnosis Farnham again caught a glimpse of the truth when he wrote:

> His love of action always pulled against his love of study. Such seemingly incompatible passions are rarely seen together in such force. Even in his college days, while still in good health and much interested in physical culture, he was marked as a man of retirement and industry, a reserved, brooding student, who seldom invited any one to his room, and at the same time an impetuous, social youth. But action was his first instinctive mode of expression, his chief pleasure in life. And it was, moreover, a kind of abnormal, physical necessity, as well as a propensity of his mind.

More accurately and tersely Parkman's friend, Dr. George E. Ellis, saw the truth when he wrote that:

> His maladies intensified his impulses to exertion and mental application, while they limited the hours he could wisely give to reading and writing.

It is strange, as we now look back at the history, that none of his friends, not even the clear head of the patient himself, should have recognized the fact that the reflexes of eyestrain produced the "highly irritable organism" and pushed him to the furious physical activity which served at once to spare his eyes and to act as an outlet for the abnormal irritation engendered by

their use. He was accustomed to say, "I shall go to pieces if I do not exercise," or "I must exercise." [6]

On the gridiron and by means of the gridiron. — In 1846 Parkman returned to work, but found that only by the help of eyes other than his own could he do anything toward realizing his literary ideals. He dictated the "Oregon Trail," in the autumn, which was published in the *Knickerbocker Magazine* in 1847, and then took up "Pontiac." Farnham writes:

He devoted himself largely to medical treatment during 1847 and 1848. He spent the greater part of these years in New York and at West New Brighton on Staten Island, under the care of an oculist, also at a water cure in Brattleboro, Vt., to improve his general health. He returned to his father's house in 1849, having reaped but little benefit from the efforts of the doctors,— the "medical faculty," as he used to call them. With the help of his friend, Charles Eliot Norton, in reading proof, he was able to prepare "The Oregon Trail" for publication in book form.

In 1853 "the enemy" again became too aggressive to be ignored, and again he resorted to water cure at Northampton. He was always willing to give the doctors every facility and to undergo any method of treatment, following faithfully the advice he sought,— excepting in regard to giving up writing.

Meanwhile, with the help of his wife and her sister, Miss Mary Bigelow, as amanuensis, he pushed along his literary labors.

Speaking of himself in his autobiographic letter, Parkman says as regards his physical, mental and ocular symptoms, that in a few months after his return to the settlements he "found himself in a condition but ill adapted to support his theory." He continues:

To the maladies of the prairie succeeded a suite of exhausting disorders, so reducing him that circulation at the extremities ceased, the light of the sun became insupportable and a wild whirl possessed his brain, joined to a universal turmoil of the nervous system which put his philosophy to the sharpest test it had hitherto known. All collapsed, in short, but the tenacious strength of muscles hardened by long activity. This condition was progressive, and did not reach its height—or, to speak more fitly, its depth—until some eighteen months after his return. The prospect before him was by no means attractive, contrasting somewhat pointedly with his boyish fancy of a life of action and a death in battle. Indeed, the change from intense activity to flat stagnation, attended with an utter demolition of air castles, may claim a place not of the meanest in that legion of mental tortures which make the torments of the Inferno seem endurable. The desire was intense to return to the prairie and try a hair of the dog that bit him; but this kill or cure expedient was debarred by the certainty that a few days' exposure to the open sunlight would have destroyed his sight.

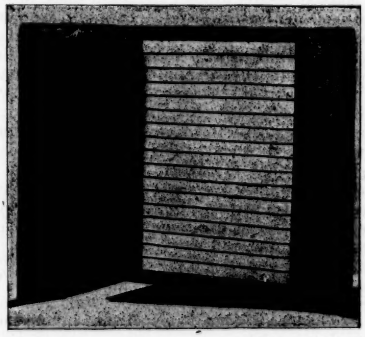
The autobiographic letter goes on:

In the spring of 1848, the condition indicated being then at its worst, the writer resolved to attempt the composition of the "History of the Conspiracy of Pontiac," of which the material had been for some time collected and the ground prepared. The difficulty was so near to the impossible that the line of distinction often disappeared, while medical prescience condemned the plan as a short road to dire calamities. His motive, however, was in part a sanitary one, growing out of a conviction that nothing could be more deadly to his bodily and mental health than the entire absence of a purpose and an object. The difficulties were threefold: an extreme weakness of sight, disabling him even from writing his name except with eyes closed; a condition of the brain prohibiting fixed attention except at occasional and brief intervals; and an exhaustion and total derangement of the nervous system, producing of necessity a mood of mind most unfavorable to effort. To be made with impunity, the attempt must be made with the most watchful caution.

He caused a wooden frame to be constructed of the size and shape of a sheet of letter paper. Stout wires were fixed horizontally across it, half an inch apart, and a movable back of thick pasteboard fitted behind them. The paper for writing was placed between the pasteboard and the wires, guided by which, and using a black lead crayon, he could write not illegibly with closed eyes.[7]

. . . . . .

He was at the time absent from home on Staten Island, where, and in the neighboring city of New York, he had friends who willingly offered their aid. It is needless to say to which half of humanity nearly all these kind assistants belonged. He chose for a beginning that part of the work which offered fewest difficulties and with the subject of which he was most familiar, namely, the siege of Detroit. The books and documents, already partially arranged, were procured from Boston, and read to him at such times as he could listen to them, the length of each reading never, without injury, much exceeding half an hour, and periods of several days frequently occurring during which he could not listen at all. Notes were made by him with closed eyes, and afterwards deciphered and read to him till he had mastered them. For the first half year, the rate of composition averaged about six lines a day. The portion of the book thus composed was afterwards partially rewritten.



PARKMAN'S GRIDIRON.
(From a photograph of the original instrument.)

His health improved under the process, and the remainder of the volume — in other words, nearly the whole of it — was composed in Boston, while pacing in the twilight of a large garret, the only exercise which the sensitive condition of his sight permitted him in an unclouded day while the sun was above the horizon. It was afterwards written down from dictation by relatives under the same roof, to whom he was also indebted for the preparatory readings. His progress was much less tedious than at the outset, and the history was complete in about two years and a half.

[6] Personal communication by his most kind and capable general physician, Dr. Oliver, who attended him for many years and to whom I am indebted for valuable and accurate information. When he could not walk, breathing and other sedentary exercises rowing, etc., were devised "to relieve the pressure."

[7] This, with the allusion in the second letter, is Parkman's only reference to this instrument, and his reticence as regards what seems to me one of the most heroic and pathetic experiences in history is profoundly touching. Miss Parkman has loaned me the "gridiron," and I reproduce here a photograph of it. The original I hope will be preserved in the archives of the Massachusetts Historical Society. A more precious relic will never come into their keeping.

(To be continued.)

MINOR SURGERY IN COUNTRY PRACTICE.[1]

BY CLIFFORD S. CHAPIN, M.D., GREAT BARRINGTON, MASS.

WHEN I was asked to write a paper to be read before the Surgical Section upon some surgical subject, I said to myself, I am not a surgeon, and what I may be able to write upon such a topic will be of little value. However, the thought came to me, how often a physician has to do minor surgical work; and with a little more care, and a little more knowledge, how much better work he could do. It is in village and country practice where a physician must be an all-round man, ready for emergencies of any nature, for often there is no hospital within twenty or thirty miles to which patients can be sent. To have to do this work is certainly excellent training for any one, but more especially for the young practitioner. If we do well the minor surgery, we will be more likely to work into, and do well, the major work which may fall later to the lot of some of us to do.

I have taken up for consideration some subjects which I feel are the more important ones of minor surgery with special reference to country practice.

Bandaging. — Bandages are employed to hold dressings in contact with the surface of the body, to make pressure, to hold splints in place in dislocations and fractures and to keep in place parts which have become displaced. The importance of being familiar with the rules of bandaging and to be proficient in applying the same cannot be overestimated. The general practitioner will never have cause to regret time occupied in learning to apply neatly this form of surgical dressing. A well-applied bandage adds to security of dressing and comfort of patient, and the manner in which it is applied often secures for the physician the confidence of patients and friends; while, on the other hand, a badly-applied bandage is uncomfortable and will cause adverse criticism to the doctor. It is not necessary to know how to put on every different kind of bandage, but to be well grounded in the principles of bandaging, and to have had a reasonable experience in applying same, is essential.

Asepsis and antisepsis. — Previous to Lister's method of treatment, it was the rule in accidental and operative wounds to have suppuration, fever, pain and often septicemia, erysipelas, etc.; hence the mortality was necessarily high. Mortality from compound fractures was very great, but by modern methods it has been reduced to a minimum. Lister's method was based largely upon the idea that the infection of a wound occurred from contact with the air, which contained spores and germs, and his method was to destroy them. It was later found that the germs from the air are usually of an innocuous character. Wound infection is more often from clothing, instruments, etc., which come in contact with it. It often depends upon the quantity of germs which enter, for we know bacteria may exist in an aseptic wound. It is well known that the same germ may produce different inflammatory affections. Some one has advanced the theory that all so-called pus diseases are simply local expressions of a general infection caused by many different micro-organisms. Acute suppuration is considered clinically to be always due to presence of bacteria, and their exclusion will prevent its occurrence. Asepsis aims at thorough sterilization of the field of operation and of all objects coming in contact with the wound, and the exclusion of micro-organisms by exclusive sterilized dressings. How important it is in all our work as physicians and surgeons to be very careful in attending to this in every detail! How much pain could be averted, how many amputations be prevented, and even major operations be saved, if only the physician who first saw the patient had simply done his duty and made the wound aseptic and continued to keep it so! It seems to me it is just here where so many of us fail. More often nature cares for the wound successfully, but even so it is our duty to always assist her when possible.

Antisepsis, on the other hand, has in view the destruction of micro-organisms by keeping germicidal agents constantly in contact with the wound. The object of antisepsis, therefore, is to produce asepsis. No one should undertake any operation or treat any wound without having clearly impressed upon his mind the importance of carrying out faithfully and scientifically all precautions necessary to prevent future infection of it. Since most wound complications are due to micro-organisms in it, it is the duty of the surgeon to prevent their entrance or employ means to destroy them. This must be done, however, without injury to the tissues of the body. Asepsis is always to be preferred to antisepsis when applicable. It seems to me so necessary that all practicing physicians should be well experienced in the ways of preparing patients for aseptic operations and caring for them afterwards. Usually these operations are performed in hospitals, but sometimes have to be done at the house. The surgeon perhaps is called from a distant city and has only a short time for operating. In hospital practice suitable rooms are provided for such work; in private practice, however, the physician is called upon to select a room and give directions as to its preparation. A well-lighted room should be selected and needless furniture removed. General directions which are usually given in textbooks seem to me to be in many cases impracticable. Often the room has to be gotten ready in too short a time to allow of removing carpets, etc., and if it is done, usually the dust created by so doing will be far greater than it would be simply to tack down upon the carpet sheets wrung out of bichloride. The great importance, in my judgment, is in paying due regard to asepsis of the wound itself. When possible prepare the patient the night before by bath, etc. The skin surrounding the site of operation should be thoroughly scrubbed with soap and water or a soup poultice applied for a few hours. Scrub the skin, not too roughly, then wash with alcohol and ether, then with sterilized water; afterwards a

[1] Read before The Massachusetts Medical Society, June 9, 1903.

dressing should be applied of either sterilized or bichloride gauze.

The instruments are best sterilized by boiling them for fifteen minutes in water to which a little washing soda (carbonate of soda) has been added. In treating infected wounds, abscesses, etc., some surgeons claim that free drainage is all that is necessary, but, in my opinion, the far better method is to treat the same antiseptically by using peroxide of hydrogen and washing with bichloride solution 1 in 2,000, and applying bichloride gauze.

Strapping. — How necessary it is to know how to do strapping and to do it well! Comparatively few country physicians pay much attention to it. If they do attempt it, it is usually done in the most crude and unfinished way. The plaster, of which I prefer the oxide of zinc adhesive plaster, can be gotten in narrow strips so that it can be neatly and evenly applied. I believe one of our best treatments for ulcer of the leg is strapping, yet I dare say but few physicians do it. In sprains it is our most useful treatment also.

Poultices. — Though poultices are used much less than formerly, they, however, do serve a good purpose at times. In inflammatory affections of the joints and of bones, when combined with rest their action is most satisfactory. In cases of deep suppuration, by their relaxing effect upon tissues they are useful and do not prevent the surgeon from using all aseptic precautions at time of operating.

Intravenous injection and infusion of saline solution. — It has been proved that normal salt solution will sustain the heart for a varying length of time as well as blood itself. Every physician should have an infusion set in his emergency bag and in his obstetric case, and should know how to use it. In profuse hemorrhage, severe cases of shock, septicemia and uremia it is invaluable. In puerperal eclampsia our best treatment, if the case will permit, is to do venesection and transfuse or infuse normal saline solution, until a sufficient quantity has been introduced into the circulation.

Anesthetics. — Anesthetics may be local, regional or general. Of the local anesthetics, the best are cocaine and chloride of ethyl. I have found the chloride of ethyl rather unsatisfactory; as to cocaine there is no question of its real efficacy, and as a rule the small percentages are as good and much safer, from a 1 to 2 % solution usually being strong enough for all practical purposes. Special care should be used when it is injected into the urethra, for frequently unpleasant effects are noted even when very small quantities of a 1 to 2% solution are used. Cocaine, when hypodermically administered, is very useful for operating upon fingers, toes and parts easily constricted; also for opening abscesses, removal of superficial tumors, etc. It is probably used for nose and throat operations more than in any other branch of surgery. A weak solution of supra-renal extract can be used in place of cocaine. Regional anesthesia I have had no experience with as yet. General anesthesia may be produced by administration of various anesthetics according to choice. Ether, however, is the more generally used. One of the most important things for a country physician, who is bound to meet and ought to be able to master all sorts of emergencies, is to know how to administer an anesthetic properly. I know when I was in the hospital, and undoubtedly it is so now, the most recent man on the staff always gave the anesthetic. I am glad now that the new man did give it, for if one is observant he learns a great deal by having to give it when there is an operator at work who will blame everything to him if anything goes wrong. I have often thought, when I have seen a physician trying to give ether and telling his patient at the very commencement to take long, deep breaths, that I would like to take the inhaler and crowd it over the doctor's face and make him take a few deep breaths. One has to take ether himself once to realize what that first feeling of strangulation is. It is unpleasant for any one to take, but it can be made comparatively easy by beginning rightly and having the patient breathe slowly at first, holding the inhaler at a distance, then gradually closer until anesthesia is complete, when it is astonishing how little ether will keep a patient profoundly unconscious. Every one should be aware of the possible accidents which may occur and be ready to do anything that may be necessary. I remember at one time, when I was an interne, seeing a young doctor giving ether, and suddenly a frightened expression appeared on his face — the patient's heart had stopped beating, his respiration had ceased; he was apparently dead. Various things were resorted to instantly without avail; finally the doctor said, "Damn it, why did you die on my hands?" and at the same moment struck the patient with his fist quite a severe blow directly over the heart. Almost instantly the heart began to beat and the patient to breathe and the apparently dead came to life.

I have never tried that treatment myself, as I have had no occasion to do so. No one should give an anesthetic without being ready with his hypodermic to give strychnin, atropin or digitalin as the case may need.

Treatment of hemorrhage. — It is very essential that a physician or surgeon should have a good knowledge of the anatomy of the blood vessels, that he may know at what points pressure applied will do the most good in controlling hemorrhage. The varieties of hemorrhage, arterial, venous or capillary, may be primary or secondary. Treatment should be both constitutional and local. Constitutional treatment consists in keeping the patient in a recumbent posture and avoiding any sudden change in position which might cause fatal syncope. I believe opium to be a valuable remedy in these severe cases. Some authorities think it is contraindicated on account of its raising blood pressure, but it is certainly useful where a patient is very nervous. Stimulants should be or should not be used as the exigency of the case demands. Infusion of normal saline solution should be resorted to when necessary. Local

treatment consists in using means, temporary or permanent, to control the bleeding. Digital pressure to parts, or to main artery, will control for the time arterial bleeding. A moderately tight compress will usually control hemorrhage until the parts can be sewed. Every physician ought to have in his emergency bag a tourniquet as well as hemostatic forceps for arresting hemorrhage. A tourniquet should not be allowed to remain for too long a time, lest paralysis or gangrene follow its use. It is when one is brought face to face with a severe post-partum hemorrhage that he wants to know all the various things for controlling it, but more than all he wants to know how to keep his head level and use intelligently and quickly the means he has at hand, or should have, in every case. There is one thing which I think is too often forgotten in these cases, which is quite sure to check it; that is compression of the abdominal aorta and keeping it compressed until uterine and vaginal tamponing has been done if necessary. In nose bleeding antipyrin in 5% solution has served me well when packing has not been resorted to. All arteries of any size should be ligated when possible. Secondary hemorrhages are much less frequent since the days of anti- and asepsis, but when occurring should be treated as primary.

Shock. — Shock is a condition of physical depression or prostration which may develop following severe injuries or operations. Feeble action of the heart and paralysis of the blood vessels cause an unequal distribution of the blood. Abdominal veins become distended, right side of the heart engorged and amount of blood in arteries correspondingly lessened. Brain and lungs become anemic. If this state continues, the action of the heart is stopped. The essential condition of shock is inhibition of nerve force and reflex paralysis. It may develop immediately after injury or later. The degree of it is usually proportionate to injury, but there are some exceptions, as contusion of viscera, etc., which though slight is often followed by grave or fatal shock. Burns and scalds, if they involve any considerable portion of the body, are apt to be followed by severe shock. I remember well cases of burns coming to the hospital in apparently good condition, and not an extensive surface burned, but dying within a few hours. In the treatment for this condition the first indication is to establish reaction. The patient should be kept very warm by being covered with blankets and surrounded with hot-water bottles, but using every precaution not to burn him. Foot of the bed should be raised and patient's head lowered. If he can swallow give whiskey, aromatic spirits of ammonia, by mouth, and strychnin hypodermically; when there is profuse sweating use atropin hypodermically also. An infusion of normal salt solution is to be used if necessary.

Fractures. — What an important subject to all, but especially to the country physician! I wonder how many of us younger men felt, when we graduated from college, that we knew well how to reduce and keep in place, in the best manner, the common, to say nothing of the uncommon, fractures. I had seen during my whole college course but few fractures and dislocations attended to. I had seen appendectomies, hysterectomies, etc., without number. No one was going to be willing I should perform any of these operations at the first, but I was likely to be called upon to reduce a fracture or relocate a dislocated bone at any time. I could put a bandage around it, go to my office and look up the different ways of dressing that particular fracture, go back to my patient and do the best I could; tell him he would probably have a deformity, but if nature did her work all right he would get a useful member. The colleges have heretofore been deficient in their real practical training in the very things which are so essential to the young physician in the beginning of his practice. Work improperly done at this time militates against him perhaps for a lifetime.

Operations. — There are certain operations which a physician should endeavor to familiarize himself with, for when the emergency arises to do them he must act promptly or his patient is promptly dead. I refer more especially to the operation for strangulated hernia. To be able to operate for this a good knowledge of the anatomy of the parts is essential. The physician must also have confidence in himself, and be able to inspire the same in others, and then must go ahead feeling that it is his duty to do the very best he can for his patient, under circumstances which will allow no wavering, and when prompt action will often be rewarded with a life saved and hesitancy be reproved with a life lost.

> "Call not on Hercules for help: his aid
> Ne'er serves the man who will not serve himself.
> Thine own arm must the conflict meet,
> Thy purpose being the victory."

In conclusion I wish to say that in our thirst for major surgery and the wonderful operations which stand pre-eminently as the great advancement in the science of medicine of the present age, let us not forget our duty as physicians and surgeons to attend well to the minor surgery which must necessarily enter into our daily work. Be well prepared so as to be ready at a moment's notice to attend to any ordinary kind of emergency which may arise. For minor surgery in country practice is no small part of a physician's work and is a part which tells for or against his reputation most markedly.

> "He who does the best his circumstances allow
> Does well, acts nobly: angels could do no more"

DISCUSSION.

DR. STEVENS of —— : After listening to this interesting paper I have very little to add. The reader seems to have covered the field, which is indeed a broad one. Speaking of bandaging and the avoidance of tight bandages — the hospital interne can see his dressings several times a day, but it is different with the country doctor. When he puts up a limb or does up a finger or hand it is

often left for twelve hours. It is well to bear in mind that it is going to swell at first probably.

As to the question of asepsis and antisepsis, rubber gloves to-day are a great help to us.

A word about bichloride tablets. It has been my misfortune in the last year to see two cases of poisoning by bichloride tablets. The country physician and surgeon often has to leave bichloride tablets at the house, and the utmost care should be taken with them.

I think that there is a great deal of value in formaldehyd solution, especially in pussy wounds, cases seen late, — 1 to 40 for maldehyd solution, a teaspoonful in a quart of water. It is pretty strong and smarts. It has a fine action on pus cavities.

Lysol is a valuable addition to our antiseptic surgery. I like creolin and moist bichloride poultices rather than the old-fashioned flaxseed poultice. Covered with paraffin paper the heat is retained.

I want to congratulate the speaker on his mentioning carrying the saline apparatus. We can get to-day our normal salt solution tablets made so as to dissolve them readily in boiled water. Representing the country physician and surgeon, I always carry a large bag. We don't know what we are going to until we get to the case.

Although a Harvard man, I like chloroform used in the proper cases. When a student I heard very little spoken about chloroform. It was always ether. I use more and more each year, but confining it to proper cases, especially young subjects with fractures. I like ethyl chloride. In short operations, like tapping the chest, I think you can anesthetize the skin so that there is very little pain.

It is well to examine the urine before giving any anesthetic. Another thing that presents itself to the country doctor, especially in manufacturing places: Cases are apt to come from the factories after a meal, and you have a great deal of trouble with the full stomach; things we never used to see in hospital work.

In the matter of hemorrhage I think there is one alkaloid of great value, and that is hydrastinine. I saw last year a case where there was oozing from all the mucous membranes apparently, and various things had been tried and hydrastinine controlled the bleeding. I do not think the patient was bled out, either.

If there is anything more troublesome than to be called to a bleeding tooth cavity in the night I don't know what it can be. Take 1 to 1,000 adrenalin solution on absorbent cotton and pack the cavity firmly and it will almost instantly stop the bleeding. It is said to be good in eye and nose work, as well as for hay-fever.

As to the question of shock, one thing struck me as important — care as to overdose, because absorption is slow after shock, the whole system is devitalized, the dose does not seem to act and you repeat and finally get overaction.

As to fractures, it is well not to be in too great a hurry to apply the permanent dressing. Reduce the fracture and wait for acute inflammation to subside. Placing an ice-bag I find is a great help. I believe strongly in plaster-of-Paris bandages properly applied.

If I am to operate I always try to have the room disinfected the night before. Formaldehyd comes in candles, and the room can be disinfected in that way. If time is limited I direct not to disturb things, such as pushing curtains up and cleaning off mantels.

DR. H. O. MARCY of Boston: There are said to be no minor things in life. The criticism I make on this admirable paper is the title — minor surgery. It is not minor in the slightest sense. It does us all good to review these fundamental principles of our work, and I am quite sure that we can all learn very much from such teaching. Personally, going over the history of a long life devoted to surgery, I now criticize my seniors rather than my juniors. In earlier days I was operating all over New England, and then ether was given by the family physician, usually little skilled as an etherizer. How few physicians to-day know how to give an anesthetic! I have often said I would give half the fee if I could have my etherizer. I believe faulty instruction in regard to etherization explains why ether is not given more outside of New England instead of chloroform. An impervious cone is usually used for administration. Nothing could be more faulty. Instead of a cone we should have a cylinder. Make the cylinder sufficiently open to carry the full volume of air the patient desires to breathe — air plus ether, and avoid asphyxia. Not long ago I had a good general practitioner give ether and came near losing the patient from his incompetency. He did not know that the patient must have plenty of oxygen with the ether. Such experiences, sometimes called minor, are the reasons why older men should review fundamental principles.

I criticize the injection of the peroxide of hydrogen into deep wounds. It is not so much of a disinfectant, destroying the bacteria, as we have sometimes thought, but an admirable means of disseminating them.

I find fault, also, with the late application of fixed plaster splints in dressing fractures. Put up a fracture as early as you may in a fixed apparatus. Reduction, retention, rest, not constriction, are the three R's of importance. The very first changes within the first few hours are processes of repair. What wounds shall we drain? Emphatically no wound that is aseptic. The primal exudation of leucocytes is of perfectly normal type, and is the "first aid to the wounded" if the wound is aseptic.

DR. D. H. CRAIG of Boston: The matter of rubber gloves was alluded to. The man who has to do the whole work, who has no assistant to help him in a country practice, oftentimes cannot properly sterilize his hands and get everything ready for an operation and maintain his hands in a sterile condition. If we have everything to work with the last thing to do would be to put sterile hands into sterile gloves. But we can carry a pair of sterilized gloves to the operation,

and these may be put on hands not perfectly sterile, if one has to do everything himself.

In the shock following severe traumatism the use of the adrenalin chloride in the dosage of ten to twenty minims of the 1 to 1000 solution properly diluted is perhaps one of the best in conjunction with strychnia and we have not the danger of cumulative action of strychnia after the first shock is over.

In relation to the use of anesthetics I had a point very forcibly brought to my mind recently which I think is not very generally known. In the use of chloroform or ether the sphincter muscles are the last to yield to the influence of the anesthetic. If the patient is in the condition of collapse, and you rapidly and forcibly stretch the sphincter ani, you almost invariably produce a gasp which will result in regular breathing following.

THE DIETARY TREATMENT OF CONSTIPATION.[1]

BY HENRY F. HEWES, M.D., BOSTON.

DURING my practice of medicine, in which through my hospital clinic and special branch of work I come in contact with large numbers of patients already under treatment at other hands, there is no fact which has impressed me more than the universality among the profession of the incorrect treatment of the condition of constipation.

To reinforce this statement let me take an extract from the records of my Out-patient Clinic at the Massachusetts General Hospital. In this clinic, out of a total of 1,200 cases seen during the months of July, August and September, 1902, 690, or 51%, gave a history of *habitual* constipation. Of these cases of habitual constipation, 660, or 90%, were using for this complaint a regular dosage of drugs which had been at some time prescribed for them, and had used drugs from the time of their first medical consultation on the subject, having received no other directions for treatment, excepting possibly that of a regular habit as to time of operation. Of the remaining 10% of cases a few had received general directions as to diet along with their drug prescriptions and the remainder were using no treatment at all.

A review of the records of my private practice shows a very similar set of results. In this practice, practically all the cases of constipation seen were using drugs for relief. About half these cases, as against 5% in the hospital cases, had received directions as to diet and habits in connection with their treatment. But in all cases drug treatment was associated with the diet and régime from the start, and there were no cases in which a pure dietary treatment had been instituted at the start or in which a systematic transition from a mixed drug and diet treatment to a pure dietary régime had been planned.

The result in both hospital and private cases was that in a great majority we had no real improvement in the underlying condition as the result of treatment, but on the contrary a much more fixed habit, both physical and mental, and a need for constantly increasing or changing drug dosage for temporary relief superimposed. All these cases have been treating for constipation for a year or more and in none had the necessity for drug dosage lessened.

Of course, there are physicians who prescribe diet and régime pure and simple for their cases of habitual constipation, and, of course, there are cases of constipation treated by drugs which, if the dosage and habits of the individual are carefully managed, are cured. And drugs may be useful for temporary conditions. But the general facts emphasized so clearly by these records quoted above — that the use of drug treatment with or without dietary or régime directions for *habitual constipation* is practically routine and universal in the profession and that such treatment is in a large per cent of the cases ineffective as regards cure — are undoubtedly true.

There is no necessity for me to dwell upon the fact with you that this condition of things is all wrong from the point of view of good medicine. The regular use of drugs to preserve the continuance of or to stimulate a physiological function is always a debatable measure and one which should be established or maintained only after a thorough search for and trial of more natural methods of relief. And this is particularly true where the weakened or disturbed function has become so, as is the rule in the condition of which we are treating, as a result of some faulty hygiene rather than through actual organic disease.

We wish to cure our patients, not to relieve them and certainly not to make them victims of drug habits. And when the patient shall pass from us to some other guardian we wish to leave as the result of our work not a harder but an easier task for our colleague.

The consideration of these facts, thus emphasized in practical experience, has led me to an extended study, partly experimental, of the subject of the treatment of constipation in general medicine, and it is the results of this study or of a part of it which I wish to present to you to-day.

The direct object of the study has been:

(1) To establish a method of determining as far as possible in a given case the source or underlying causes of the constipation present.

(2) To ascertain a method or methods of treatment of the condition in its various manifestations which will tend to establish the natural physiological function as far as possible as a permanent and self-supporting condition.

It is taken for granted in the study that the function is one which should go on in every individual independently of external artificial aids other than those which are always present in the natural course of hygienic existence, namely, the food, bodily exercise and a regular habit.

Where this regular physiological function is lacking, that, is in any case of constipation, we can assume that we are dealing with one of two general propositions. Either the patient has some definite pathological lesion or condition,— as some

[1] Read before The Massachusetts Medical Society, June 9, 1903.

obstruction to the intestine, some lesion of the nerve mechanism or its function, or some general disorder of metabolism which affects the normal action of the intestines, — or he is living under a faulty condition of hygiene, as a result of which the natural forces or stimulants of the physiological function are lacking. And our course in the study of our case is to determine in how far either of the above elements, the pathological or the physiological, is an underlying factor; and if the pathological, what its nature is, and then proceed directly to the removal or remedying of the cause or causes as the fundamental step in the treatment of the case.

Now acknowledging that a faulty hygiene, a lack of the natural agents or stimulants of physiological action, may be a cause and a total cause of constipation, — and this fact is proven beyond all doubt by extended research, very definitely also, as you will see, by the results of this investigation which I am presenting to you,— the proper plan of treatment in all cases is clearly, whether a definite pathological cause has been determined as an associate in our case or not, to effect at the start as far as possible a correct hygiene in this respect. If the faulty hygiene is the cause of the constipation, this measure will cure. And whatever our cause or causes may be, this step is in the right direction, as establishing at the start one correct factor of treatment and at the same time helping us to a diagnosis of the actual causal condition of our constipation by exclusion and assisting in the cure, whatever this further condition may turn out to be. If an underlying pathological condition is present and the constipation fails to yield to correct hygienic régime we can then proceed to the removal or remedying of this cause by further means.

And here again in our second step we must keep equally in mind the fact that we are working to establish a normal physiological function, which should go on of its own accord independently of artificial aids, and that whatever relief we may obtain by artificial means, as, for example, drug dosage, a cure can be said to have been established only when the function does go on unaided excepting by natural agents, as food and hygienic measures. That is, if besides removing or remedying a definite cause — as an obstruction, a weakness of innervation, or faulty metabolism, an anemic condition — by appropriate treatment, we find it necessary to stimulate or control the intestinal functional action of secretion or motion, we must do so as far as possible by the employment of those means, increased in degree but similar in kind, which nature uses for the purpose in hand; that is, by the supplementing natural hygienic agents to intestinal action, the inclusion of special foods and extra exercise in the régime. In this manner we depart as little as possible from the normal in the habits of the patient and of his economy, and make a final resumption of normal existence under the progressively improving conditions of health more easy to re-establish. Only as a last resort or for temporary use should we avail ourselves of the assistance of artificial stimulants, as cathartic drugs, which from the very nature of their action make a resumption of the normal habit more difficult.

The first step in the rational treatment of a case of habitual constipation is therefore often, regardless of what the associated pathological condition may be, the establishment of a normal hygiene, especially in regard to the function of intestinal action.

Experience has taught us that those factors of hygiene which bear most directly upon the physiological function of the intestine are:

(1) The habit of a regular period of defecation.
(2) A proper amount of physical exercise.
(3) A proper diet.

We must at the start, therefore, advise as to these.

Of these factors the first two explain themselves.

In regard to the third it is necessary first to ascertain the exact nature of the patient's accustomed diet and to supplement this until it corresponds to the normal diet.

The character of the normal diet, that best suited to the average individual and correct according to a scientific study of the body metabolism, is as follows[2]:

The quantity of a normal diet should average, under ordinary conditions, from 40 to 50 calories per kilogram of weight, or from 2,800 to 3,500 calories in twenty-four hours.

As regards quality, the best diet for all purposes in the average individual is one which approximates for every 100 calories of food 51 of carbohydrates, 29 of fats and 19 of proteids, or for a calorie value of 2,200, carbohydrates 1,100, fats 663, proteids 427. The normal diet should be made up also as much as possible of foods in their natural state, cooked or uncooked, and not of artificial preparations of nutritious principles; that is, meat, eggs, cereals, bread, vegetables, white and green, fruit, milk, — the kind of diet man in this zone has accustomed himself to for ages. (Vid. notes 4 and 5.) It should contain in addition to the food about three pints of water daily.

When we have established a diet for our patient approximating this normal standard we must next consider what further aid to nature can be obtained along these same simple lines.

The constipation in the case may be and frequently is simply due to the absence of the proper regimen. This faulty regimen long continued may have induced sluggish habits of the intestine, so that some additional stimulus to action besides the average normal is needed. Or we may be dealing with a condition of atony of the intestine, some weakness of the muscle of the wall or of its innervation, where some extra stimulus to action is necessary.

In seeking some aid for this stimulation we look most naturally to the food, which is the one of our normal hygienic factors affecting the intestine which can be most easily varied or reinforced; that is, we include in or add to our normal diet

[2] Rubner: Leyden's Handbuch der Ernährungs-Therapie. Bd. 1, 1897.

those articles of food which are known to be, among the general foods utilized, those which have most influence on the action of the bowels.

It is a well-recognized fact that in addition to the general action of the normal food products upon intestinal action, there are certain food elements which have a more special influence upon this action.

This marked influence of special foods upon intestinal action was first impressed on my mind as a definite scientifically-demonstrated fact by some observations of Westphalen.[3] This observer, in several years of practice in Russia, partly among peasants and partly among dwellers in St. Petersburg, noted the fact that while constipation was a very common affection among the citizens it was almost unknown among the peasants. The same distinction existed even where city dwellers of the same habits of exercise as the peasants were observed. In searching a cause for the fact observed, Westphalen located it in the diet of the two classes. That of the peasant in Russia consists almost entirely of vegetable food, including coarsely ground grains. That of the city dweller, as worked out in the writer's tables, is made up in much greater proportion of animal food and contains few coarse grains and much less vegetable matter. Taking these observations as a basis for his experiments, Westphalen tried placing patients with habitual constipation on the regular peasant diet, with marked substantiation of the original hypothesis deduced from his general observation, that the vegetable diet serves as a marked stimulus to intestinal action.

Starting, then, with this hypothesis, that the intestinal function may be greatly influenced by the quality of the food, we must in connection with our plan of treatment first study the special action of the various substances in this regard.

A thorough consideration of the various food substances from the point of view of their influence upon intestinal action indicates that the foods having this special action may be divided into three classes, according to their way of producing their influence.

In the first class we have all food substances possessing a large undigested or unabsorbed residue (even when taken in quantities so moderate as not to overtax the alimentary canal). These are principally vegetable substances possessing much cellulose, as the grains in coarse form, green vegetables, fruit, also foods with many seeds, as berries, figs, etc. It is this class of substances which predominated in the diet of the Russian peasants observed by Westphalen, and which was utilized by him in the treatment of constipation.[4]

[3] Westphalen treated 110 cases of habitual constipation of the type known as atonic constipation by dietary measures pure and simple, using an excessive vegetable diet, occasionally reinforced at the start by oil enemata. Of these 99 were cured without resort to drugs, 11 cases only necessitating the use of drugs, as cascara.—Westphalen: Archiv. f. Verdauungs-krankheiten, Bd. vi, p. 161.

[4] Rubner has shown experimentally that on a diet made up entirely of animal food, the intestines take three or four days to show the residue, while with a vegetable diet of corresponding nutritive value emptying occurs in from nineteen to twenty-four hours. On a diet of beets rich in *cellulose* (see table, page 537) emptying occurred in four hours. — Rubner, loc. cit.

While a fasting stool (observation on the faster Cetti) weighs about 20 gm. daily, a stool from an individual on an average normal diet of meat and vegetable and fat weighs from 100 to 250 gm. A stool from an individual upon a purely vegetable diet of equal nutritive value to the normal diet averages about 500 gm.—Hammeter, "Intestines," vol. I.

The quantity of unabsorbed or undigested residue obtained under ordinary conditions from common food substances can be seen from the following tables taken from Rubner (loc. cit.):

Food.	*Dry residue.*	*Per cent. Unabsorbed. Proteid residue.*	*Per cent. Unabsorbed. Carbohydrate residue.*
Meat	4.9	2–2.6	
Fish	4.3	2–2.5	
White of egg	5.2	2.6	
Milk	8.8	7.8	1
White bread	4.2	21	2.9
Rye bread	20.9	46	14
Pumpernickel	19	43	13
Rice	4.1	20	0.9
Peas	9	17	3.6
Beans	15–18	30	7.4
Potatoes	9	30	15
Crisp cabbage	14.9	18	15
Turnips	20.7	39	18
Beets	20	39	18

This table shows also the carbohydrate residue which may by undergoing fermentation form products which increase intestinal action. These cellulose substances have a further value besides their production of large residue. The cellulose forms material for fermentation in the intestine with formation of organic acids, which naturally aids intestinal action.

Another food substance which may serve to reduce residue in special cases of constipation is fat. As a rule the fat taken in normal quantity leaves little if any residue. If an excess is taken, however, a considerable residue may remain, which acts also as lubricant of the intestine. Thus Berthé[5] has shown that in a diet consisting of 350 gm. of meat, 500 gm. of bread and 60 gm. fat, 7 to 8% only of the fat appears in the feces. If to this diet 60 gm. of fat be added, the residue of fat begins to increase after an initial period of extra absorption, rising to 12 on the seventh day, 18 on the twelfth day, 49 on the thirtieth day. The use of fat to increase residue is not, however, quite so much in the purely physiological line as that of the cellulose vegetables first mentioned in this class, as these produce residue even when taken in ordinary amount.

The second class of food substances having special influence upon the intestinal action consists of foods containing considerable quantities of organic acids or other substances which by their local action, or their action upon metabolism or nerve centers after absorption, increase intestinal activity. In this class are certain fruits, especially the *tamarind*, *prune*, *plum*, *manna* and certain green vegetables.

The third class consists of substances which undergo fermentation in the intestine, with formation of organic acids. These are the carbohydrate foods generally, including the cellulose of the vegetables already mentioned.[6]

[5] Berthé, quoted by Maly, Hermann's Handbuch, vol. I, p. 243.

[6] Bokai (Archiv. f. d. Path. u. Pharm., Bd. xxiv, 1888) shows that the fermentation of carbohydrate foods acts upon intestinal peristal-

In following out our plan of the dietetic treatment of constipation, then, having established our normal physiological diet for our individual, we include in it a fair proportion of the above special forms of food, varying the make-up according to the exact nature of our case and the circumstances of the patient.

Thus for the bread in the diet we advise black bread, or whole-wheat or rye bread, in place of white bread; for vegetables we give cabbage and beets, turnips, lettuce; for dessert we advise prunes or tamarinds.

If the feces show marked absence of fat we may try giving a large quantity of fat to promote a fat residue. If feces are already large in quantity, but action sluggish, we may be inclined to depend more upon the second class of foods, those containing organic acids and stimulant substances — the prunes and tamarinds — and to press these excessively.

Whatever the course we may adopt after study or experiment with our special case, we are providing a treatment for our condition entirely along physiological lines, providing natural methods of action and encouraging no mental or physical habits of artificial aids to action.

I have for the two last years been giving this system of treatment trial in all cases of simple habitual constipation which have come under my care. The general plan of treatment has been as follows:

Each case at the start, besides general directions as to hygiene and health, was instructed to give up the drugs which were in use for the constipation and to depend entirely upon the diet presented for this function.

A complete diet list, providing a diet of sufficient caloric value of mixed food elements, was written out, special emphasis being placed upon the foods of special value in constipation. As dessert, at one or two meals, depending upon the case, the patient was ordered a saucer of cooked prunes, about ten prunes at a time.

An example of the diet list which was written out for each patient at the start may be seen below. In the routine, simply the varieties of food were recorded, the quantity being to a certain extent left to the patient. With a list of this kind it is fairly safe to assume that a patient taking the usual quantities of the foods advised would get a sufficient total quantity to satisfy the normal standard of nutritive value.

The actual nutritive value of such a diet, given in prescribed quantities for each article of food, is given in the second part of the table appended.

Table 1.

DIET LIST FOR CONSTIPATION.

Plan diet in following manner, eating the usual quantity of foods presented and using the variety allowed in list:

Breakfast:
Cereal with cream and sugar — preferably corn meal, or rye and oats.
Two soft boiled or scrambled eggs.
Bread — preferably black bread, or pumpernickel, or rye bread, with much butter.
Fruit — apples or grapes.

Dinner:
Soup — preferably vegetable soup.
Fish or meat, or both, with salad.
Vegetables — at least two kinds, preferably spinach, cabbage, beets, turnips; potatoes, beans or peas if desired.
Dessert of rice or bread pudding or custard — including daily a saucer of prunes.

Supper:
Bread and butter.
Cocoa.
Cold meat and vegetable salad.
Dessert of stewed fruit — apples or pears or figs. If necessary include a saucer of prunes.
Drink at least three pints of water daily.

TABLE 2.

	Proteid, gm.	*Calories.*	*Mineral Salts, gm.*
Breakfast:			
200 gm. (about 6 oz.) porridge, oatmeal, rye, barley, Indian meal or wheat	4–6	150–200	4
8 gm. sugar or porridge		8	.001
1000 gm. milk or porridge	5–6	120–140	3
50 to 100 gm. bread, 1 to 3 slices	4–7	150–300	.5
15 gm. butter	.2	120	.5
2 eggs, or 50 gm. steak or chops	12	150–180	.5
Fruit: oranges, apples or grapes	0.5–1	50	.1
Dinner:			
120 gm. consommé or chicken broth, or potato, pea or tomato purée with salt	1–5	100–200	1
100 to 200 gm. beef, chicken, lamb, ham or sweetbread	20–25	200–400	1
Or 200 gm. bluefish, salmon, halibut, cod or mackerel	12–20	150–300	
50 gm. potatoes	1.5	60	.5
100 gm. spinach, asparagus or squash	1	100–200	.5
75 gm. peas, beans, macaroni or corn	9–15	300	3
Custard, or ice cream, or Indian pudding	6–15	150–250	1
Cheese and crackers	2–5	300	1
Supper:			
Bread and butter	5–7	200	1
Cocoa, one cup	6	150	1
Milk, one glass	8	200	3
Stewed fruit, pears, baked apples, peaches with cake, or griddle cakes	3–4	200–300	.1
	gm.	c.	gm.
Approximately,	80–130	2,650–3,600	21.71

Such a diet was maintained for one or two weeks. Enemata were used when necessary at the start. If at the end of the period the diet worked without aid from enemata, as was frequently the case, the patient was instructed to continue in it, gradually cutting down the prunes and possibly to some extent the proportion of fruits or green vegetables. In this way after a time an ordinary diet with plenty of green vegetables and fruit and an occasional prune dessert was approximated in many cases as a permanent habit.

In cases which were very much the victim of drug habit for their constipation, or in all cases which did not improve after ten days to two weeks

sis chiefly through its products of organic acids (lactic, butyric, acetic acids and the carbon dioxide). Schmidt (D. Archiv. f. klin. Med., Bd. vi, 1898) shows that the fermentation products of cellulose act upon the intestinal function.

of the above diet with the prunes, prunes stewed with a certain quantity of senna were prescribed (1 oz. of senna leaves placed in a cheese-cloth bag and stewed with three or four dozen prunes).

The patient was told to take a saucer of this dish for dessert once to thrice a day, according to need, in addition to his special diet. After one to three weeks the senna was omitted from the prunes (it was best to have this omitted without the knowledge of the patient if possible) and the patient continued on the regular constipation diet.

It was frequently necessary to use the senna at the start in cases which had depended much upon drugs. Given in the above way it was very easy to gradually lessen the dose while the general effect of the laxative diet was establishing itself, and the mental effect on the patient of the dosage given in this way was not at all the effect of giving a drug for laxative purposes.

In some special cases other methods, as the inclusion of fat excess in the diet, were tried. As a rule, however, the above plan was given and adhered to in all cases.

The treatment has now been tried upon 126 cases taken in routine with no selection of cases, excepting that cases with obvious pathological lesion as a probable cause of the condition, as tumor or definite disease of the alimentary tract, were sometimes excluded.

Of these 126 cases 100 were hospital cases and 26 private.

The plan was stated one year ago and all the cases included in the record have been under observation for six months or more. The result of the experiment up to date may be seen from the following table:

TABLE 3.

Total number of cases not heard from 68. (All hospital cases.)	
Total number of cases under observation 58.	
Number relieved by treatment 54.	
Of the 58 cases 40 were relieved by the diet alone, including prunes.	
The remaining 18 necessitated senna with the prunes at the start, but all save four of these have finally become able to continue on the diet alone without the senna.	

In most cases the relief came at once and continued. In a few it was a matter of one to several months before the result was accomplished, and frequently slight adaptation of the diet varying on the routine plan had to be made for the special individual, as the inclusion of excess of fat or of more organic acid in the diet.

These results indicate two facts very emphatically:

First, that in a very large majority of the cases of constipation which occur in the routine of practice, the chief if not the only cause or underlying condition is a failure of the individual to follow a normal physiological manner of life.

Second, that in a large majority of all cases of constipation taken without reference to the cause or underlying condition, a complete cure, so that the patient can get along without the regular use of drugs or other artificial aids, can be established by a proper direction of general régime and diet.

These results are the more encouraging since a large proportion of them were obtained in out-patient hospital patients, whose facility for carrying out the directions was limited. One cannot but feel that a treatment which could be so successful under these conditions is one thoroughly adapted to routine practice. On the whole, when we consider that all the patients treated already had the drug habit to some extent, the quick response to dietary régime is quite remarkable and was a great surprise to me, as also to the patients. It must be borne in mind, however, that these results were obtained under a method which included extreme attention to and study of the patient, much more than is accorded in the rule where a simple diet list is made out and the patient sent away to follow this indefinitely. This was, it is true, all that was done at the start, and the number of cures with this simple procedure alone was large. With many of the cases, however, very intimate study of the condition as to gastric digestion and motility investigated by study of the gastric contents, general metabolism as studied by quantitative analyses of the urine, intestinal digestion and absorption studied by examination of the feces and adaptation of the treatment to the findings in these regards, was necessary before success was forthcoming.

Taken all in all, however, the record is such as to confirm us in the surety that we have a method of treating constipation in a large majority of our cases which is effective and also ideal in that it follows the natural physiological method of accomplishing the function in question and does away with extraneous or drug stimulation.

HYPERCHLORHYDRIA.[1]

BY ROSCOE W. SWAN, M.D., WORCESTER, MASS.

A FAIRLY constant set of symptoms appear in about one-half of all stomach cases. They might be described in the following manner:

Usually persons from fifteen to forty years of age; in all walks of life, well-to-do and otherwise; no respect to position or social standing; but constant sufferers.

They will tell you that after eating a meal, say from one to three hours or more, they have a sensation of fullness in the epigastrium, with pains radiating through to the back and extending to the region of the heart, or extending over the abdomen. Oftentimes they have a burning sensation which is accompanied by eructations of a warm fluid rising in the mouth and called waterbrash, or is accompanied by expulsions of a foul-smelling gas, which has a choking sensation in the throat. If this gas does not make its appearance through the gullet, it remains long enough to produce marked distention of the stomach as well as acute colicky pain in the intestines.

After these conditions have lasted for months, and many different remedies have been tried

[1] Read before The Massachusetts Medical Society, June 9, 1903.

without results by as many different physicians, the patient becomes very irritable, despondent and even melancholy. Headaches appear, mostly hemicranial and periodic, leaving as abruptly as they begin, only to return shortly. The memory is poor, together with insomnia and depression. They round out a set of symptoms similar to neurasthenia, or marked anemia occurs. The appetite is almost always good and the weight is not changed. There is usually intense thirst, and the urine is free and frequent, is slightly acid in reaction, is deficient in chlorides and indican is increased. But at times the acid is diminished, and this diminution of acid in the urine during digestion is a rough measure of the increase of HCl in the gastric juice. Oftentimes there is nausea, with vomiting, preceded and followed by tenderness over the epigastrium.

At the time when the stomach is empty these patients are free from pain. The ingestion of food and drink almost immediately gives relief to the symptoms for a short time. These symptoms generally end with the evacuation of the stomach.

The bowels are usually sluggish.

All of these conditions correspond to a disease known and described as hyperchlorhydria, which has been spoken of so often of late that many different views are expressed about its supposed origin, and as many more about its course and treatment.

Many of these symptoms may arise directly from the stomach, or reflexly from the central nervous system, which in these cases suffers intensely at times through the absorption of toxins from the stomach.

Some authors deny the existence of persistent disorders of secretion which are not produced by an anatomical lesion of the gastric mucosa, and the majority of writers consider all the dynamic affections of secretion to be neuroses. No one will deny that secretion may be disturbed through the nerves which control it. Prolonged study and careful investigation have led to the conclusion that disorders of secretion are not always due to an alteration of the mucosa or to a neurosis of the vago-sympathetic system.

The normal stomach does not secrete when it is empty, and at most only 10 to 20 cc. of gastric contents can be removed when the tube is introduced into the normal stomach in the early morning before breakfast, but sometimes when the stomach tube is introduced at this time it will be found to contain more than 20 cc. of a liquid rich in HCl and the digestive ferments.

When a figure of acidity of 70 is reached after an Ewald's test breakfast, there is always present a hyperchlorhydria.

Hyperchlorhydria denotes a pathological increase of the HCl in the filtrate of the gastric contents at the acme of digestion.

The causes of hyperchlorhydria are those common to a large number of other diseases of the stomach and are as often found in the constitution and temperament as in the mode of life and the alimentation.

The abuses of condiments, the eating of large quantities of red meat, and imperfect mastication, are common causes. It is most frequent in the arthritic and the neuropath, in neurasthenia, hysteria and in melancholia. It is quite frequently associated with intestinal autointoxication. It is common in colilithiasis and renal lithiasis, in chlorosis and in nicotine poisoning and malaria.

Mental and moral causes play an important part. Cerebral fatigue may mark the beginning of the trouble and illustrates the close relations existing between the brain and the abdominal sympathetic.

The trouble may begin immediately after a particular meal, or it may be, and generally is, more gradually developed after a meal composed of starches, cereals, sweets, vegetables, fruits and fats, causing discomfort and pain at the height of gastric digestion.

The diagnosis of hyperchlorhydria can be frequently made by the existing subjective symptoms; discomfort or pain appearing one or two hours after meals, and alleviated by the ingestion of food or alkalies, speaks most prominently in favor of this condition. The diagnosis, however, is only a probable one, not yet positive. In order to make it decisive it is necessary to examine the gastric juice at the height of digestion. If too great acidity (caused by HCl) is found and the just-mentioned subjective symptoms prevail, the diagnosis of hyperchlorhydria is positive. The figure of acidity is one and one-half, sometimes double or three times as large as normal, the normal HCl being from $\frac{1}{10}$ to $\frac{2}{10}\%$.

The microscopic and chemical examination of the stomach contents after a test breakfast give us the most conclusive evidence as to existing conditions.

The examination of the blood is of great aid in drawing conclusions which will enable us to apply successful treatment to hyperchlorhydria. While all modes of research as to the pathological condition are important, the blood examinations are the most interesting if not the most important.

The differential diagnosis, in spite of the clear-cut features of the disease, may present some difficulties, and in some cases only a probable decision can be made.

Dyspepsia of liquids with supersecretion presents a very similar group of symptoms. The objective signs can alone differentiate the two diseases.

Displacements of the stomach may manifest the same subjective symptoms. The pain, however, is peristaltic, and due to the stomach trying to overcome the pyloric obstruction; is not removed by albuminous food, and milk may be badly borne. The physical and functional signs make the differentiation clear.

Hyperchlorhydria may be easily confounded with ulcer. HCl is not always in excess in gastric ulcer, although it may be a predisposing cause, and when doubt exists an ulcer cure should be prescribed. A hemorrhage large or small would exclude the functional trouble. Pain in

ulcer is not relieved by taking albuminous food. Otherwise the functional and subjective signs may be almost the same. The pain is increased by movements, and may be relieved by rest in a particular position.

Hyperasthenic gastritis resembles hyperchlorhydria even more closely than does ulcer. The gastritis is more directly traceable to diet and alcoholism.

The contents of the gastric juice after a test meal contains a large quantity of mucus and cell nuclei.

The signs differ only in degree and not in kind.

The prognosis is generally good; there are but few cases which resist all kinds of treatment, and for these in most instances complications (either some organic lesion of the stomach or of the central nervous syystem) must be looked for. In very old people an unfavorable prognosis must sometimes be given, as when the symptoms point to a malignant disease.

The diet for hyperchlorhydria is yet a subject of great controversy. Some clinicians forbid starchy foods entirely, and nourish their patients principally upon an animal diet. Their reason for forbidding the starches is that the amylolysis in hyperacidity is greatly diminished, the acid checking the conversion of starch into sugar quite early.

There is, on the other hand, quite a number of well-known clinicians who forbid meats to patients with hyperchlorhydria on account of their property to produce an increased flow of gastric juice. They prefer a milk diet and the carbohydrates.

On account of the variety of opinions advanced, one is justified in recommending the diet giving the best results, and in my own cases I prefer a mixed diet of a predominance of albumens and sparingly of the starchy food. Sweets increase the quantity but diminish the acidity of the gastric juice, and in moderate quantity are beneficial. Spices, condiments, acids, oils and alcoholic drinks should be absolutely prohibited.

The treatment consists in checking an excessive flow of gastric juice; and first among the remedies used is the extract of belladonna or its alkaloid, atropin. In the experiments carried out the amount of HCl was diminished from one-third to one-half the normal amount. The tendency which HCl has for combining with the different alkalies when brought in contact suggests the proper ones to use in hyperchlorhydria; that is, calcined magnesia combines with nearly twice its weight of HCl, and bicarbonate of soda combines with less than half its own weight.

The best of results are obtained by combining magnesia and soda in such proportions as the urgency of the case requires, increasing or diminishing the magnesia as the bowels are confined or loose. Carlsbad salts reduce the amount of HCl, especially when prolonged over a period of four weeks at a fashionable health resort. Nitrate of silver in dose of 1-1000 by means of the intragastric spray gives fine results.

Lavage of the stomach will relieve the pain of a stubborn cramp in the region of the pylorus, there being nothing to do but to wash away the strong irritating acids. This is best followed by the intragastric spray of nitrate of silver.

It should not be overlooked, however, that there may be a chronic gastritis with a normal or an excess of acid. Here the alkalies are to be preferred to the salines, and should be administered warm.

Constipation will, as a rule, be relieved by the alkalies as soon as they neutralize the acidity. Then the carbohydrates to be digested pass through and stimulate the bowels to act. Rhubarb and soda, or large injections of, say, 8 oz. of olive oil, change of habitation from country to seashore, will overcome the cause. Massage of abdomen is followed by good results.

Hydrotherapy may be tried to suppress mental irritation. A cold sponge bath followed by brisk massage will accomplish much toward quieting the nerves.

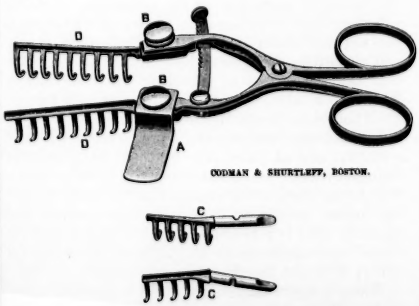
As every organ is strengthened by activity and weakened by lack of exercise, one cannot urge too strongly the importance of diminishing the amount and number of artificial digestives employed in hyperchlorhydria.

New Instrument.

A MASTOID AND AURICLE RETRACTOR.[1]

BY FREDERICK L. JACK, M.D., BOSTON.

THE mastoid part of this instrument is a modification of Allport's retractor and Jansen's mouth gag. The additional simple device to hold the auricle is thought to be new. The following cut illustrates the many advantages of the instrument.



CODMAN & SHURTLEFF, BOSTON.

There are three sets of blades, varying in length to fit different lengths of incision. Two sets only are recommended. The teeth are placed close together and with the blades in position, the edges of the wound are widely separated so as not only to afford sufficient room for operating, but to control hemorrhage. The handles are

[1] Read before The American Otological Society, Washington, D.C., May 13, 1903.

pressed together like those of scissors and held in place by a ratchet. The instrument is quickly adjusted and absolutely self-retaining.

The auricle, which is often in the field of operation, requiring an assistant to hold it well forward out of the operative field, is now perfectly held aside by means of the ear tip. The tip (*A*) is simply a thin piece of metal adjusted to a groove in the head of screws. Both heads (*B*) are grooved so that it can be readily used for the right or left ear. After the retractor is in place, the upper half of the auricle is folded over and held in place by adjusting the tip in the groove.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

TWENTY-SEVENTH ANNUAL MEETING, HELD AT WASHINGTON, D.C., MAY 12, 13, AND 14, 1903.

(Concluded from No. 11, page 298.)

SECOND DAY.

SOME OBSERVATIONS ON THE USE OF ROENTGEN RAYS IN DERMATOLOGY.

By DR. HENRY W. STELWAGON of Philadelphia. In this paper the author limited himself essentially to his own observations. He stated that in the x-rays we had a potent remedy in some cutaneous diseases, chiefly in some of the epitheliomata. It was also productive of benefit and even cure in some cases of lupus, scrofuloderma and other forms of cutaneous tuberculosis, and it would probably prove a permanent curative influence in some cases of lupus erythematosus. In other skin diseases, more especially acne of stubborn type and in acne rosacea, its effects were occasionally brilliant. In certain limited keratoses, especially of the palms and soles, it might be resorted to with a good chance of its being beneficial and occasionally curative. The same might be said also of the local forms of hyperidrosis. In eczema, psoriasis and other like comparatively inoffensive dermatoses he would reserve it for those cases which proved intractable to other plans of treatment. While recognizing the great value of this therapeutic agent in dermatology and that future observations might give it a still stronger hold, he has hesitated, as yet, from his own relatively limited experience, to subscribe without reservation to its possession of the almost marvelous powers accredited to it by other writers in so large a number of dermatoses.

THE RATIONALE OF AND THE INDICATIONS FOR THE THERAPEUTIC USE OF ROENTGEN RAYS.

By DR. WILLIAM A. PUSEY of Chicago. The author stated that the microscopical changes occurring in tissues affected by x-rays have been studied by various observers and their findings showed a striking uniformity. The first changes occurred in the epidermis. There was marked hyperplasia of the prickle-cell layer, with increase in the number of cells and increased formation of pigment and of keratohyalin, followed after further exposure by breaking up of nuclei or division of the nuclei; subsequently, there was degeneration of the cells and if the process proceeded further, complete disintegration. The changes in the corium were of a similarly striking character. The changes produced in diseased tissues were similar to those seen in normal tissues. The process was one primarily affecting the tissue cells; there was evidence first of stimulation of cellular activity and later, if the effect was intense, there followed derangement or disintegration of the affected cells. The changes occurred first and most strikingly in the epithelial structures and next in the blood vessels, but it was likely that they developed also, though to a much less degree, in the cells of all the tissues of the affected areas. From a consideration of the effect of x-rays upon tissues and upon bacteria in living tissues it was not difficult to arrive at a fairly accurate estimate of the indications for the therapeutic use of this agent. The actions of the x-rays which offered opportunities for therapeutic application were as follows:

(1) The action in causing atrophy of the appendages of the skin. (2) The destructive action upon organisms in living tissues. (3) The effect upon the metabolism of tissues. (4) The power of destroying certain pathological tissues. (5) The anodyne action, to which attention had been called by the effect upon pain in malignant growths, in neuralgias and in diseases of the skin accompanied by itching.

DR. L. A. DUHRING of Philadelphia said he was firmly impressed with the value of the Roentgen rays as a therapeutic agent in numerous diseases. He favored the use of the low vacuum tube.

DR. JAMES C. WHITE called attention to the possible injurious effects of the rays, even when the applications were made by men of great experience in the handling of the apparatus. The ultimate use of the rays should be confined to instances where the knife or cautery was not considered advisable.

DR. L. DUNCAN BULKLEY of New York emphasized the importance of measuring the dose of the remedy. He favored short exposures at close range and not too frequently repeated.

DR. F. H. WILLIAMS of Boston said that while the x-rays offered a remedy of much value in the treatment of skin diseases, it should be used with the greatest care. Some cases of even superficial new growths did not yield readily to the treatment and in some instances they were actually aggravated by it. Such cases, however, were uncommon. Another disadvantage was the long duration of the treatment.

DR. WILLIAM A. HARDAWAY of St. Louis said that while all were agreed as to the utility of the x-ray in malignant new growths of the skin, particularly in that type of growth approaching the rodent ulcer, there was some legitimate reason to doubt its value in acne and various other forms

of skin disease. He also spoke of the relapses that occasionally followed the treatment.

DR. E. B. BRONSON said the value of the x-rays was, in more ways than one, the burning question in therapeutics. In the application of the remedy there was still lacking a certain degree of precision. The essential feature was the amount of irradiation, and this depended, he thought, upon the condition of the tube. The actuating element he regarded of less importance.

DR. HARTZELL said that until physicists told us what the x-rays were and furnished us with apparatus to gauge the strength of the rays, we would be limited to the effects they produced. The time of the exposure must be determined by the effect produced. The same rule applied to other therapeutic agents. The proper dose in one case would be insufficient in another and too much in a third. He favored short exposures daily until a reaction occurred; then the intervals could be lengthened.

DR. FRANK HUGH MONTGOMERY of Chicago said that in the treatment of superficial epithelioma about the forehead, nose and cheeks with the x-rays, he had not seen one failure in at least over one hundred cases. In psoriasis the results were brilliant almost invariably, but the lesions recurred as fast as after other methods of treatment. In lichen planus the results were excellent. In acne he looked upon it as the ideal local treatment, but there were quite a number of cases in which, after the face had cleared, there was a return of the disease from outside.

DR. F. H. SHEPHERD said that x-ray burns were usually produced in the course of skiagraphic work and not in the treatment of skin diseases. He did not think the use of the x-rays should be advised in the treatment of epithelioma of the lower lip, on account of the usual involvement of the glands in the submaxillary region.

DR. MARTIN F. ENGMAN of St. Louis cited a case of epithelioma of the tongue successfully treated by the x-rays.

DR. A. P. BIDDLE of Detroit mentioned a case where the tube exploded, badly cutting the patient's cheek.

DR. JOHN T. BOWEN of Boston gave a brief review of the result of the Roentgen ray treatment in dermatology in the Massachusetts General Hospital during the past year. In all, 142 purely cutaneous diseases were treated by this method. This number was made up as follows: There were 55 cases of epithelioma, of which 27 were healed, 9 were benefited but failed to continue treatment and 19 were still under treatment. There were 4 cases of carcinoma; these were not benefited. Seventeen cases of keratosis senilis, 11 of which were cured, 4 were benefited but failed to continue treatment and 2 were still under treatment. There were 22 cases of tuberculosis, including lupus, verrucosa and scrofuloderma; 15 of these were healed, 4 were benefited but failed to continue treatment and 3 were still under treatment. There was 1 case of multiple round-cell sarcoma of the skin, which was not benefited. There were 12 cases of folliculitis, 8 of which were healed, 2 were benefited but failed to continue treatment and 2 were still under treatment. There were 7 cases of eczema, 5 of which were healed and 2 were still under treatment. There were 8 cases of psoriasis: 6 healed, 2 still under treatment. There were 4 cases of varicose ulcer, 2 healed: 1 benefited but failed to continue treatment, 1 still under treatment. There was 1 case of cellulitis of the leg, which failed to show any improvement. Two cases of varicose dermatitis: 1 healed; 1 benefited but failed to continue treatment. Two cases of acne; both healed. Two cases of hypertrichosis; both healed. Two cases of alopecia areata; not benefited. One case of erythema induratum; healed. One case of scleroderma; not improved. One case of hyperidrosis; not improved.

PROFESSIONAL DISCRETION: THE MEDICAL SECRET.

By DR. P. A. MORROW of New York. In this paper the author discussed the complicated problems that often confront the physician in dealing with patients suffering from venereal disease. On the one hand, he was bound by the obligations formulated in the precepts of the Hippocratic oath; on the other, by his duty to society at large. In the ordinary treatment of venereal disease he found it easy enough to adjust his line of conduct in strict accordance with his code of professional duty, as in such cases the individual interests of the patient alone were involved, but when a venereal patient consulted a physician in regard to marriage the situation was changed, then the interests of others might be jeopardized. His protective duty extended to the wife and future children and through them to society at large. There was no situation in the entire range of a professional man's experience so painful as to recognize himself powerless to prevent the morally culpable union of a syphilitic man and an innocent woman. What had been termed the "eternal problem" of the professional secret had long engaged the thoughtful attention of medical men. Like all problems connected with the prophylaxis of venereal disease, it was exceedingly complex and baffling. It might be said that no solution of these problems had ever been proposed, no plan of action for the regulation or control of these diseases had ever been formulated, which did not come in conflict with individual liberty, legal rights or moral principles. In the larger proportion of cases, venereal diseases were introduced into marriage from extra-conjugal infections, contracted *post nuptias*. Here it was evident that the preventive duty of the physician could not be exercised. Other phases of the subject discussed by Dr. Morrow in his paper were the relation of the physician to the syphilitic husband or wife, to the syphilitic nurse, syphilis in domestic servants and lastly, industrial infections.

DR. GILCRIST said he thought syphilis should be regarded from the same standpoint as smallpox. It should be looked upon as a highly contagious disease.

DR. STELWAGON called attention to the fact that many hospitals refused to accept venereal

patients, on the ground that it would encourage vice. Physicians themselves, he thought, were partly to blame for the increase in venereal diseases, as they were too apt to belittle this class of affections.

Dr. H. G. Klotz of New York advised the wide dissemination of a knowledge of the dangers attending the contraction of venereal diseases. The subject should be handled without gloves. Syphilis was not a venereal disease, but a disease of the public.

NOTE ON A METHOD OF EARLY DIAGNOSIS IN A CASE OF LEPROSY.

By Dr. Francis J. Shepherd of Montreal. The patient, a Chinaman, was admitted to the Montreal General Hospital with a skin affection of an erythematous type. Leprosy was suspected and the city authorities were anxious for a positive diagnosis in order that the patient, if suffering from leprosy, might be sent home. The ulnar nerves were enlarged. A section was removed from one of them and on examination it was found to contain numbers of the bacilli of leprosy. Thus the diagnosis was positively established.

Dr. Frank H. Montgomery of Chicago called attention to the early involvement of the posterior auricular nerve in leprosy. According to one authority, it was involved in 90% of all cases of anesthetic leprosy and much earlier than the ulnar nerve.

Dr. Morrow said that in a very large proportion of cases of leprosy the identification of the lepra bacillus was easily made in the nasal secretions.

DERMATITIS VENENATA — A SUPPLEMENTAL LIST.

By Dr. James C. White of Boston. In this paper the author placed on record for convenient reference a list of the agents which had been observed to produce inflammation of the skin by contact since the publication of his work on Dermatitis Venenata in 1887. Some of these had already been described by him from time to time. The list included chlorhydrat-paraphenyl-diamin; (found in certain hair dyes), aureole, also used as a hair dye; orthoform; salol; resorcin; aristol; ichthol; dermatol; europhen; pyoctanin; creolin; iodvasogen; kerosene; electricity; aurantia, an orange-colored dye used to stain leather; cocus wood; guiacum; humulus; heracleum; angelica; hyacinth; Ginkgo tree; cotoneaster; humea.

Dr. Morrow called attention to the importance of a very thorough investigation in every case of dermatitis venenata. Many innocent plants have obtained a bad reputation for toxic effects simply from misinterpretation.

Mr. V. K. Chesnut of the United States Department of Agriculture said the most common causes of skin poisoning from plants were the poison-ivy and the sumac, both of which were very widely distributed in this country. He stated that persons who handled radishes in abundance were apt to be poisoned.

Dr. Stelwagon said that the drug metol, used by photographers in the development of negatives, often produced a varying degree of dermatitis of the hands and sometimes of the face.

Dr. Gilcrist mentioned a case where an eczematous eruption was produced by a weak solution of boracic acid, used as a rectal injection. Dr. Klotz said he had observed the same thing in cases where the drug was used for irrigating the bladder in cystitis.

Dr. James C. White in closing said that while it was a popular belief that ivy poisoning might recur spontaneously a year after the original attack, he did not regard that theory as at all plausible; there were no grounds for it. On the other hand the skin of a person who had once been poisoned by ivy was no doubt more susceptible and with the onset of warm weather, eczematous lesions or other forms of dermatitis might occur. It was well known that the poison of the ivy vine was quite evanescent.

A NEW DRUG ERUPTION OF THE IODOFORM TYPE.

Dr. S. Pollitzer of New York read this paper. He reported a number of cases of dermatitis, of a vesicular and crusted type, resulting from the external use of mesotan, which was described chemically as a methyl-oxymethyl-ester of salicylic acid. Mesotan was a comparatively new remedy for rheumatism and was applied externally over the affected parts, after diluting it with an equal volume of olive oil. The local application of the remedy was promptly followed by an agreeable sensation of warmth and tingling, the skin became reddened and within half an hour after its application, salicylic acid could be detected in the urine.

REPORT OF A CASE OF DERMATITIS GANGRENOSA INFANTUM.

By Drs. J. Nevins Hyde and E. R. LeCount of Chicago. The patient, an infant seventeen months old, had always been in good health, with the exception of a single attack of bowel disorder, from which it had promptly recovered. It had walked at the twelfth month and had accomplished the normal eruption of teeth. There was no history of varicella, variola or vaccination. The family history was good and there was no record of unhygienic surroundings in the home. The child was admitted to the hospital on Feb. 15, 1903. Ten days before, the mother had first noticed some reddish blotches on the abdominal surface of the child. Two days later, beginning with the left hand, the fingers became yellowish-red in color and much swollen. Gradually, the involved digits assumed a darker hue. A physician was summoned on the third day, who incised the tumefaction between the fingers, with the result of liberating a "watery fluid." On the fifth day of the disease, eruptive lesions appeared on the back, the feet became swollen and much discolored. At the time of admission, the child's temperature was 104° F.; there was considerable stupor and the child moaned occasionally. The abdominal surface was symmetrically and rather

thickly overspread with superficial, globular, discrete pustules, as large as split peas, well defined and distended and having a grayish-white color. They were neither umbilicated nor superimposed upon papules of similar size. On the extremities they were less numerous and conspicuous. The back was equally involved with the abdominal surface, but the lesions were obviously more abundant in the regions of pressure. On the eleventh day a marked change occurred in the eruptive phenomena, superficial papulo-pustules cropping out among pustulo-bullous lesions and there were decidedly more numerous and more deeply encroaching gangrenous areas where the lesions were large and threatening. The parts about the radial border of the left hand were in a gangrenous state. The left foot was swollen, cold and blackened; the right foot was similarly involved, though less extensively. Several of the digits of both the hands and feet were attached to the limb merely by tags of gangrenous tissue and eventually one of them became practically separated from the limb by the morbid process. Death occurred on the fifteenth day of the disease.

REPORT OF A CASE OF SYMMETRICAL GANGRENE.

DR. E. B. BRONSON of New York reported a case of symmetrical gangrene affecting the lower extremities. The patient was a girl who had always apparently enjoyed good health. She was thirteen years old when the affection was first noticed. The family history was fairly good, although it showed some gouty and neurotic tendencies. The patient had had no severe illness and though of a nervous temperament, she possessed good self-control and normal mentality and had never given the slightest indications of hysteria. The disease began some eight years ago and from beginning to end had occupied the same regions. The lesions were exactly symmetrical. There were areas over the shins, at the junction of the middle and lower third of the legs and on each side of both ankles behind the malleoli. The first attack came on in summer and for several years the succeeding attacks occurred in that season. About five years ago they began to occur in the winter also. Their most important feature was pain, which was both burning and lancinating in character and at times intense. This was accompanied with a dusky redness, heat and swelling and occasionally excoriations; the latter the patient thought were usually the result of the severe treatment to which she was subjected, namely, caustics and at times curetting. There was never any ischemia nor coldness of the affected parts. The attacks lasted usually about six weeks and there were seldom more than two or three attacks in the course of a year. At one time, some two years ago, there was an intermission of eighteen months between the attacks. Commencing last May or June, there was a continuous attack lasting until the middle of October; it was the severest of all and attended by the development of deep gangrene — usually on the shins. After the gangrene had reached its fullest extent, the pain rather suddenly ceased, but the dry, black sloughs showed very little tendency to separate and after waiting a month or more they were removed by the knife, it being necessary to cut almost to the bone before reaching healthy, living tissue. Since then (six months ago) there had been no recurrence of the disease.

THIRD DAY.

A CASE OF MULTIPLE ANGIOMA.

DR. ABNER POST of Boston reported this case. The patient was an under-sized but apparently healthy girl of sixteen who bore upon her right arm a series of curious outgrowths or tumors which practically occupied the whole of the palm and extended in scattered nodules to the sternum. The first growth appeared on the arm when the patient was one year old. The arm gradually became swollen, of a bluish color and an irregular, lumpy outline. Shortly afterwards a puffiness of the hand was noticed, which also underwent the same change. During the past six or seven years similar spots had developed on the chest. Six years ago, a number of the superficial elevations were cut away, but they recurred in practically the same locations. A microscopical examination of the tumors proved them to be hemangiomata.

THE PRESENT STATUS OF PHOTOTHERAPY.

By DR. FRANK HUGH MONTGOMERY of Chicago. The paper was based on the author's recent observations in the Copenhagen and other light institutes, on published reports and on the personal experience of Dr. James Nevins Hyde and his own. He stated that in lupus vulgaris no other treatment was so uniformly successful or gave such good results from a cosmetic standpoint. The x-rays had given equally good results in some cases, but were more dangerous and the resulting scars were not always so good. Phototherapy was also of great value in the treatment of lupus erythematosus. It had given good results also in some cases of rosacea, vascular nevi, alopecia areata, indolent ulcers, acne and superficial epithelioma. In the two last-named diseases, the x-rays were, however, equally efficacious, more convenient and less expensive. In Finsen's Institute (Copenhagen), as the result of improvements in the apparatus, the time (and therefore the expense) of the treatment had been reduced to one-fourth that required in cases treated prior to 1901. A new and inexpensive lamp for the treatment of a single patient had been devised by Professor Finsen and Dr. Reyn. It was built on the same principles as the larger apparatus and was equally effective. Of the many other small lamps on the market, some were of value in the treatment of superficial lesions, but, as shown by clinical and laboratory tests, none had the penetrating power of the concentrated Finsen light and all were therefore ineffective in deeper-seated disease. The most refrangible ultra-violet rays, which were highly bactericidal for surface cultures, penetrated the epidermis less than

one millimeter. The effective light was found in the visible blue and violet, with possibly a few of the immediately adjacent ultra-violet rays. Finsen believed that the reported failures of the red-light treatment of smallpox were due to imperfect technique. He hung in the room with the patient a number of sensitized photographer's plates. If, at the end of the treatment, these plates showed the influence of white light, the technique had been defective.

Dr. George Thomas Jackson of New York showed one of the small lamps devised by Dr. Piffard, which was very rich in ultra-violet rays. The London lamp had been used at the Presbyterian Hospital during the past year, with varying success. In one case of epithelioma of perhaps six months' standing, the lesion, which was a superficial one, disappeared after three exposures to the light. Regarding the length of the exposure, Dr. Jackson said he had no fast rule. Sometimes an exposure of five minutes gave rise to an intense dermatitis, while in another case there might be no reaction after an exposure of twenty-five minutes.

Dr. William A. Pusey of Chicago said he had been interested in comparing the effects of phototherapy and radiotherapy, and it seemed to him that there were one or two conditions in which the former was preferable. There was a field of usefulness for phototherapy in the treatment of flat nevi and in conditions where it was desirable to produce an inflammatory reaction and be on the safe side. It was safer than radiotherapy.

Dr. E. B. Bronson said the effective agent in phototherapy was not the ultra-violet rays alone or even chiefly. Finsen had demonstrated very effectively, by experiments on rabbits, that there was a wide disparity between the penetrability of the different lamps. The penetrability depended not on the ultra-violet rays alone, but on the visible rays as well.

Dr. Montgomery, in closing, said there was no question that light rays were highly bactericidal on the surface,—the vast majority of bacteria were destroyed very rapidly by the ultra-violet rays.

SOME PRE-CANCEROUS AFFECTIONS OF THE SKIN, MORE PARTICULARLY PRE-CANCEROUS KERATOSES.

Dr. M. B. Hartzell of Philadelphia read this paper. He stated that a small number of diseases of the skin, after existing for a longer or shorter period as benign affections, exhibiting neither the clinical nor the histological features of malignancy, might terminate in epithelioma. This termination, although far from being the rule, occurred in a sufficient number of cases to exclude the probability of mere coincidence and to warrant the application of the term pre-cancerous to such affections. These diseases did not belong to a single pathological group, but included inflammations, neoplasms, hypertrophies and such alterations of the skin as might result from previous disease or injury. In this list of pre-cancerous affections, Dr. Hartzell included the following: Paraffin dermatitis, a peculiar inflammation of the skin occurring in workers in tar and paraffin; the dermatitis of the scrotum met with in chimney sweeps, due to the irritation of soot; lupus vulgaris, in a small proportion of cases; other forms of cutaneous tuberculosis, such as tuberculosis cutis verrucosa; rarely, after lupus erythematosus; new growths of the skin, congenital or acquired; pigmented nevi; chronic leg ulcers; cicatrices arising from any cause, but more particularly those resulting from burns; various forms of circumscribed keratoses, such as cutaneous horns and callosities; arsenical keratoses; the so-called senile seborrhea, a better name for which was the senile keratoma of Besnier. The latter Dr. Hartzell regarded as the most frequent and perhaps the most important form of pre-cancerous keratosis.

Dr. James C. White of Boston mentioned a case of epithelioma of the hand following a prolonged x-ray dermatitis.

Dr. Pusey said he had recently had the opportunity of studying a remarkable case of chronic x-ray dermatitis in a man who manufactured apparatus for producing the rays. He was burned from the middle of the trunk upwards, the lesions resembling those of xeroderma pigmentosa. Subsequently he developed an epithelioma, for which his hand had to be amputated.

Dr. Stelwagon said he had seen a number of examples of chronic x-ray poisoning in which there were decided keratoses that pointed suspiciously towards the development of epithelioma.

Dr. Martin F. Engman of St. Louis said he thought that sunlight might possibly have something to do with the development of senile keratoses. The lesions occurred most frequently on exposed parts.

Dr. L. A. Duhring reported a case of typical lupus erythematosus followed by the development of carcinoma. He had never seen a similar case.

Dr. S. Pollitzer of New York thought that epithelioma following lupus, whether of the vulgaris or erythematosus type, might depend upon the mechanical methods of treatment employed. Otherwise it was difficult to see why an inflammatory process like lupus should result in epithelioma more frequently than any other inflammatory disease.

PALUDIDES, WITH THE HISTOPATHOLOGY OF A CASE OF MALARIAL PURPURA.

By Dr. Martin F. Engman of St. Louis. In using the word "paludide," the author followed the suggestion of Vernuiel and Merklen and also Brocq to express the probable origin of certain familar eruptions associated with malarial infection. In the cases he reported, twenty-four in all, the malarial plasmodium was demonstrated in the blood. The list included herpes simplex, herpes zoster, pompholyx, urticaria, angioneurotic edema, trophic changes in the skin (non-inflammatory pityriasis), erythema multiforme, purpura and gangrene. He did not attempt to express an opinion as to why so many different types of erup-

tion should emanate from the same source, nor did he wish to be understood as claiming that these eruptions were peculiarly malarial in origin; therefore, the term "paludide" was not used in the sense that one employed the word "tuberculide" or "syphilide." The object of the paper was to point out the necessity of blood examinations in eruptions with any semblance of periodicity of their symptoms. Many of the paludal dermatoses were not accompanied by any constitutional symptoms, pyrexia, chills, etc., the dermal symptoms being the only manifestations of the infection. In the histologic examination of a paludal purpura the lymph channels were widely dilated, the superficial vessels were empty and the deeper ones engorged. There were marked symptoms of edema and slight diapedesis of red cells from the deeper vessels. No thrombi were found.

The PRESIDENT, DR. BOWEN, said he did not think the term "paludides" was an especially fitting one. While malaria was the cause of the eruptions in the cases reported by Dr. Engman, similar eruptions were also produced by other causes.

The following officers were elected for the ensuing year: President, DR. JOSEPH ZEISLER of Chicago; Vice-President, DR. M. B. HARTZELL of Philadelphia; Secretary and Treasurer, DR. CHARLES J. WHITE of Boston. Niagara Falls was selected as the place of next meeting, which will be held early in June, 1904.

Recent Literature.

Physiological Aspects of the Liquor Problem. Investigations made by and under the direction of W. O. ATWATER, JOHN S. BILLINGS, H. P. BOWDITCH, R. H. CHITTENDEN and W. H. WELCH, Sub-Committee of the Committee of Fifty to investigate the liquor problem. Vol. I, pp. xxii, 396. Vol. II, pp. 379. Boston and New York: Houghton, Mifflin & Co. 1903.

As indicated on the title pages, these books represent the work and preliminary conclusions of a systematic investigation of the alcohol problem in all its bearings, undertaken under the auspices of the so-called Committee of Fifty. The immediate research was carried out by a sub-committee, composed of men of science, and others particularly versed in the various aspects of the alcohol question in its social, physiological and pharmacological bearings. The general result is a work of very great significance, containing as it does the most reliable experimental data yet collected on the subject, and a vast number of facts regarded from various points of view bearing on the general question.

At the beginning of the first volume, the authors have very wisely given, in small compass, their report, which includes methods of investigation as well as results. Some of the general conclusions reached may be summarized as follows: Experimental evidence is of doubtful value in determining individual susceptibility to alcohol in man; from somewhat untrustworthy data it is probable that of adult males in this country, not more than 20% are total abstainers and not more than 5% are positively intemperate; 80% of brain workers use alcoholic drinks to some extent; the injurious effect of an alcoholic drink is due mainly to the alcohol it contains; cheap liquors are not so injurious as ordinarily supposed; the question as to whether alcohol is a food or a poison depends upon idiosyncrasy and amount; alcoholic drinks may be temporary restoratives, but they probably lessen the power of the organism to resist infectious or contagious disease; so-called scientific temperance instruction in public schools is unscientific and undesirable; children should be taught certain definite facts regarding alcohol, but should be guarded against false impressions.

The book is mainly taken up with detailed papers on various aspects of the alcohol problem, considered largely from the laboratory side, of which the foregoing summary gives the main results. The report by Dr. H. P. Bowditch and Dr. C. F. Hodge on the "Present Instruction on the Physiological Action of Alcohol" will no doubt be read with very particular interest. It is an exhaustive and fair criticism and arraignment of the so-called scientific temperance instruction, with which the name of Mrs. Mary H. Hunt is chiefly identified.

Educators and legislators alike should read and ponder this section. It cannot fail to have influence in modifying the present most unfortunate state of affairs. To a careful student of the subject the articles by Chittenden, Billings, Abel, Atwater and Welch will also be read with much profit. We regret that a clinician's point of view is not appended.

The general feeling one has on putting the book down is of gratification that so systematic a treatise has been published on a subject of such vital general importance, and also that much remains to be done before the involved questions may be said to have received a definite scientific answer. In the meantime we are convinced that the publication of this book will serve as a means of enlightenment to the great mass of intelligent but uninformed persons, whose concern it is to take a sane attitude in a question of this import.

An English Handbook to the Paris Medical School. By A. A. WARDEN, M.D., with prefatory letters by LORD LISTER and Prof. W. W. KEEN. London: J. and A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1903.

The difficulties of finding one's medical way about Paris are met by this small book. It is well arranged, and gives the information a student needs in planning a course of study in that city. It is replete with facts of importance.

THE BOSTON

Medical and Surgical Journal

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THE ALLEVIATION OF TUBERCULOSIS.

One of the hopeful signs in the conflict with tuberculosis is the increasing tendency to spread knowledge by popular means which shall not unduly alarm the community but which shall have the tendency to spread the knowledge which should and must be known if the dangers of infection are to be avoided. So radical a change has come upon us in our estimate of the character of tuberculosis that the following statement from the pen of Dr. Lawrence F. Flick, founder of the Pennsylvania Society for the Prevention of Tuberculosis, is possible:

> Some men, in their zeal to save human life, recently have ridden the false theory of heredity of consumption so far as to want to forbid by law marriage to all consumptives. The enactment of such a law would be utterly unwarranted.
>
> Consumption is not inherited. On the contrary, immunity gradually comes to those in whose ancestry the disease has existed.
>
> What immunity the white race enjoys has come to it through heredity. It is to children of consumptive parents that we owe the protection we now possess.
>
> Life, therefore, would not be saved by prohibition of marriage between consumptives. On the contrary, the conserving power of nature would be handicapped in its operation.

How true this may be it is not our purpose to discuss, but the fact remains that heredity, with all the untold misery which that word signifies in the popular mind, has begun at least to be eradicated from consideration in the treatment of tuberculous persons. This is certainly valuable in so far as it lays stress upon what all must consider the essential element in prevention, that is, the care of the individual tuberculous person.

We have before us a circular issued by an association in a neighboring town, the function of which is to cure at home, if possible, persons suffering from tuberculosis, to relieve with food all needy tuberculous persons, to educate the entire community in the cure and prevention of the disease, and to promote the establishment of hospitals for hopeless cases. This association, although apparently organized by laymen, has the interest and co-operation of prominent physicians. This sort of propaganda, under persons of proper knowledge and ability to meet the difficult questions which are sure to arise, is wholly to be commended; in fact, it is only through the education of the public that the eradication of tuberculosis is to be expected, and this naturally may be best brought about by a general campaign inaugurated by the people themselves. This movement, of which we have just spoken, is intended to be largely educational, and among other means to this end there will be on file at designated places, and open to the public, reports from other organizations working along similar lines, reprints of medical papers relating to the general subject and pamphlets descriptive of sanatoria. We wish this society, and all others with a similar purpose in view, the greatest possible measure of success.

AN EPIDEMIC OF TYPHOID FEVER UNDER PECULIAR CIRCUMSTANCES.

Nothing has been more conclusively demonstrated in the experience of the Merrimac River cities, as well as in other communities, than the danger of using as drinking water a supply taken from a polluted stream without purification. Measures of different character have been taken by these industrial cities for improving their water supplies, whereby the deathrate from typhoid fever has been very greatly diminished in them. In the two larger manufacturing cities of Lowell and Lawrence, systems of canals are in use for supplying the needed water for the mills, and in the mills this water is generally used for washing purposes and for the supply of closets, etc., although it is much more polluted than that of the river and consequently entirely unfit for drinking.

On the night of July 18 a serious fire occurred in Lowell at one of the mills, where, for a few hours only, it became necessary to increase the supply needed for fire purposes. By some defect the polluted water of the canals for a short time probably gained access to the pipes used for the distribution of the public supply. Within a few

days from the date of the fire, there was a marked increase in the amount of diarrheal diseases generally throughout the city and on July 31 cases of typhoid fever began to be reported until the whole number reported up to Aug. 31 was 153.[1] The number of cases of typhoid fever reported in July were only five, being one each on the 1st, 8th, 23d, 25th and 31st.

The cases reported in August were as follows:

Dates,	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Cases,	6	2	3	6	4	6	6	9	8	7	5	15	8	8	9	3	7	8	7	9	5
Dates,	22	23	24	25	26	27	28														
Cases,	0	1	0	4	1	2	2														

Total in August, 151.

The occurrence of this epidemic emphasizes the fact that measures intended for the protection of life and health are of higher importance than those which are taken for the protection of property alone, and those which are intended or used for the latter only should not be so arranged as to imperil the former.

DEPARTMENT STORE PHARMACY.

A SAMPLE of beeswax was recently obtained at a department store in Boston, which, in order to please the multitude of its patrons, maintains a drug counter. The sample was sent to the State Board of Health for analysis (since the board is authorized to carry on an inspection of food and drugs), and was found to be largely adulterated. Whereupon the board sent a notice to the proprietor of the department store informing him of the fact that his *cera flava* was adulterated.

The following reply was received by the Board:

BOSTON, July —, 1903.

Gentlemen:—We are in receipt of enclosed (notice), dated July —, and are unable to learn what you refer to. We are informed that "*Cera flava*" is the Latin for prepared meal. We have so many kinds that we cannot (if this is what you refer to) discover which one. If you will kindly make it plain to us, we will make further investigation.

Respectfully yours,

"We are also informed" that the principal items of sale at these department store drug counters are cosmetics, tonics, bitters, "blood purifiers" and other proprietary articles, while the legitimate and officinal articles of the pharmacopeia are but little sought for, hence possibly the lack of familiarity with the latter on the part of the proprietor. This being the case, it would not be at all surprising if accidents should occur in such establishments, not merely on account of carelessness, but on account of sheer ignorance of pharmaceutical work.

[1] This number 153 includes the two cases reported on July 25 and 31. The dates given above are those on which the patients were taken sick, not the actual date of reporting, the latter being occasionally unreliable.

SEX IN INDUSTRY.

THE Massachusetts Bureau of Labor Statistics has issued a reprint in advance of its Thirty-third Annual Report, in which are presented the numbers of persons of each sex employed in gainful occupations in the State in the census year 1895. The number of persons thus employed in 1895 was 1,079,090, of whom 27.1% were women as compared with 26.8% in 1890, 24.2% in 1880 and 22.1% in 1870.

In the principal groups of employed persons, females were found as follows:

In government occupations, national, state and municipal, 14.2%; professional occupations, 45.5%; domestic service, 84.3%; personal service, 43.4%; trade, 15.7%; transportation, 0.5%; agriculture, 0.7%; fisheries, 0.2%; manufactures, 29.0%; mining, 0.0%; laborers, 0.2%; apprentices, 9.6%; children at work, 41.8%. As a matter of interest it appears that one woman followed the occupation of blacksmith out of 6,604 thus employed, three were carpenters out of 28,578, nine were engineers, five firemen (or women), one teamster, one cobbler, one scissors grinder.

Out of all the female workers in the State 88% are unmarried. Over 100,000 are in factories, 79,000 are servants and 20,000 practice professions. An increasing number of women appear to prefer freedom, work and an income to married life.

Turning to the figures which are specially interesting to medical men, the results of enumeration as presented are unsatisfactory, unscientific and misleading. Under the general head of medicine are embraced 5,800 persons, 5,114 of whom are men and 686 women, but in this general class or group are included clairvoyants, chiropodists, dentists, manicures, midwives, veterinary surgeons, physicians, and physicians and surgeons.

The number of physicians and physicians and surgeons who were willing to answer to the nickname of "allopaths" was 1,432, of whom 56 were females. There were also 385 who answered to the name of "homeopaths," 83 eclectics, 77 specialists and 2,213 who were not specified. Of the 4,188 persons employed in the profession of medicine, 486 were females.

The useless character of this classification is apparent upon consulting the latest catalogues of the members of the two largest medical organizations of the State, the Massachusetts Medical Society and the Massachusetts Homeopathic Medical Society, the former of which shows a list of 2,607 members and the latter 328 members. Under the head of "personal service" 4,810 persons are grouped as nurses, of whom 4,473 were women. On pp. 247–250 are reproduced several tables, said to be "drawn from official sources," that is, the State Registration reports, in which the original blunders of those reports are copied *in ipsissimis verbis*, but with the addition of others not in the original reports, the term "marriage rate" in each instance being confounded with the rate of persons married per 1,000 population.

MEDICAL NOTES.

THE CAUSE OF POPE LEO'S DEATH. — Profitless as such discussion now is, a difference of opinion has arisen among Italian physicians regarding the cause of Pope Leo's death Professor Cardarelli has published a statement for the purpose of demonstrating that death was due either to cancer of the pleura or tuberculous hydrothorax. This is not in accord with the opinion and postmortem examination given out by Drs. Lapponi and Mazzoni, who regarded the final illness as pleurisy or pleuro-pneumonia. It is probable that the matter will not now be decided to the satisfaction of either of the disputants.

ENLARGEMENT OF PORTSMOUTH, VA., NAVAL HOSPITAL. — It is said that Surgeon-General Rixey will advocate an enlargement of the General Naval Hospital at Portsmouth, Va. At present the accommodations are for two hundred patients, and it is proposed to enlarge the hospital so that it will accommodate five hundred. Isolation wards will also be provided.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Sept. 16, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 28, scarlatina 17, typhoid fever 27, measles 11, smallpox 0.

BOSTON FLOATING HOSPITAL. — The last trip of the Boston Floating Hospital for the year was made Sept. 14. The managers would have been glad to have continued further into September had the necessary funds been forthcoming. The summer has been, in many respects, more satisfactory, as regards work accomplished, than any preceding season, though much more could have been done with a more commodious boat.

NEW YORK.

OPENING OF MEDICAL DEPARTMENT, COLUMBIA UNIVERSITY. — It is announced that the opening exercises of the Columbia University College of Physicians and Surgeons for the academic year 1903–04 will be held Thursday, Sept. 24, 1903, at three o'clock. After a brief address of welcome by the president of the university an address will be delivered by Walter B. James, M.D., Professor of the Practice of Medicine, upon "The Old and the New Medicine." Seats will be reserved for the Trustees of the University, for members of the Faculty and for other officers of instruction.

NEW YORK'S WATER SUPPLY. — The announcement has been made that the forthcoming report of the commission of three experts, headed by Prof. William H. Burr of Columbia University, appointed by the mayor to examine into the available sources for an increased water supply for the city, will contain six propositions regarding the subject. Three will deal with the Croton watershed, one with a modified plan of the Ramapo project, which some time ago obtained notoriety as a threatened political job, a fifth with the storage possibilities of the Adirondack region and the sixth with a Catskill Mountain storage proposition that is entirely new. This last contemplates the construction of an enormous reservoir on Esopus Creek, west of the Hudson River in Ulster County. For some time engineers have been at work along the course of this stream, and one of the best reservoir sites has been shown to be at Bishop Falls, near Spokane in the western Catskills, on the line of the Ulster and Delaware Railroad. Surveys and measurements have already been made here and specifications have been outlined, so that the proximate expense of such a reservoir can be pointed out in the report. By damming up a section at this location it has been found that an area of eight square miles could be utilized as a natural reservoir, and that a very large supply of water could be obtained at comparatively small expense. The scheme suggested contemplates carrying the water in an aqueduct under the Hudson River near Kingston, and thence down the east side of the river. It is estimated

that the construction of the whole work would take ten years, at the end of which time New York would have one of the most satisfactory water plants in the world, and at a cost that would be at a minimum per gallon furnished.

MEDICAL INSPECTION OF SCHOOL CHILDREN. — Just previous to the opening of the public schools for the season on Sept. 14, the president of the Board of Health made assignment of fifty-five medical inspectors and thirty trained nurses to the stations at which examinations were to be made of all children entering the schools. The corps of physicians and nurses work under the direction of Dr. J. J. Cronin of the Health Department. All pupils found to be affected with trachoma, ringworm, whooping-cough or other contagious disease are required to be conducted by the nurses to their homes, where their parents or guardians are advised in reference to securing medical attendance for the children and as to such hygienic care as will contribute to their return to school at as early a period as possible. The inspections will, of course, be continued throughout the school year.

RECREATION CENTERS. — The Department of Education has designated seventeen school buildings in the borough of Manhattan and three in Brooklyn as recreation centers during the coming season, and an invitation to the use of these is extended to all working boys and girls. At each of the schools provision is made for systematic training in gymnastics and athletic sports, as well as for reading and quiet games and the encouragement of literary and debating clubs. In addition, a study room is provided where students can obtain special preparation for civil service and regents' examinations, and the various departments are to be open every night in the week except Sunday.

A "CHRISTIAN SCIENCE" DIFFICULTY. — Dr. L. J. McAdam of Buffalo was recently called to see a child in a Christian Science family at death's door from a "mortal thought" of diphtheria. He was not allowed to prescribe, however; the parents, who no doubt feared legal inconveniences for themselves, stating that all they wanted from him was a death certificate. Dr. McAdam very properly refused to give this, and immediately reported the case to the proper authorities.

SMALL DAMAGES TO A PHYSICIAN. — Dr. Hubbard N. Mitchell of New York has received an award of only $700 in a suit brought by him in the Supreme Court at Jersey City against the Jersey City, Hoboken and Paterson Street Railway Company, in which he claimed $50,000 damages. In an accident last year, in which a car of this company in which he was riding was derailed, Dr. Mitchell was thrown down, his head striking the seat on the opposite side. In consequence of the injury received he claimed that he became deaf in his left ear, which was specially trained for auscultatory purposes, and that as a result, his practice, which he stated to have been previously worth $30,000 a year, had been interferred with to a most serious extent.

NOTES FROM THE PHILIPPINES.

LIBRARY OF GOVERNMENT LABORATORIES. — The library of the government laboratories in Manila has recently been increased by the addition of about a thousand new books of reference, chiefly in German and French. This library is already the best and most complete scientific library in the Orient, the books all being of the latest editions and chosen with especial care, and files of all the leading medical journals of the world being maintained. While this library is primarily for the use of officials of the government, its use by the physicians of Manila is invited, and its sphere of usefulness thereby much enlarged.

WORK IN GOVERNMENT LABORATORY. — Work on the new government laboratory is progressing slowly as a result of the difficulty in obtaining suitable labor and proper material. It is semi-officially announced that the building will be ready for occupancy on Jan. 1, 1904, but the work can scarcely be completed until several months later. In the meantime the building occupied by the government laboratories has become too cramped by reason of the constantly increasing volume of work which is carried on, and the biological division has been crowded out and forced to take up temporary quarters in a rented building on Calle Iris, pending the completion of the new laboratory building.

PAIL CONSERVANCY SYSTEM. — Major G. M. Barber has just been appointed to a position under the Board of Health in charge of the operation of the pail conservancy system for the disposal of excreta and of the work of scavenging and removal of refuse. Major Barber has been connected with the street-cleaning departments of New York and Chicago, and comes directly from Cuba, where, under the direction of General Wood, he accomplished the cleaning up of the city of Santiago, and brought its street-clean-

ing and scavenging force up to a high state of efficiency. His experience should make him a valuable man for similar work in Manila, though local conditions are even less favorable here than they were in Santiago.

Removal of Board of Health Offices. — The Board of Health has lately moved its offices from the Ayuntamiento to more commodious quarters in the Potenciana building, where it will be permanently established.

Appointment of Police Surgeon of Manila. — Dr. Albert T. Short, until lately a contract surgeon in the army, has recently been appointed police surgeon of Manila. He is one of several American physicians who have married into Filipino families, and expects to remain in the islands permanently. As the police force is composed of both Americans and Filipinos, Dr. Short's appointment will probably be agreeable to all concerned.

Leper Colony. — Work on the leper colony at Kulion has been abandoned for the rainy season. The work has been much delayed by the absolute impossibility of securing laborers from among the Filipinos. Progress here along all lines is much hampered from this cause. With the rigid exclusion of Chinese enforced, the manual labor proposition resolves itself into the fact that the white man cannot work, the Filipino won't and the Chinaman is not allowed to do so.

"Rinderpest Meat." — A committee has been appointed to investigate and report upon the use as food of meat from animals affected with rinderpest. The board found that such meat has habitually been used by the natives without apparent ill effects, and that although the use of flesh from any sick animal was undesirable, meat from rinderpest animals could not be regarded as directly injurious to health. In view of this fact, and considering the question of the effect of such prohibition upon the price of meat, the board recommended that the sale of meat from rinderpest animals be for the present authorized, provided these animals be in the early stages of the disease, the meat be stamped "rinderpest meat" and be sold only by authorized dealers placing placards in their stores stating that they dealt in such meat.

Improvement in Cholera Situation. — In view of the recent great diminution in the number of cholera cases, and the fact that those which occur are largely traceable to the use of infected water from the Pasig River, the health authorities have lately felt justified in largely modifying the prohibited food list which has been in force for nearly a year. Pineapples, guavas and fruits which are peeled before being eaten are now allowed. The restrictions still remain in force as regards salad vegetables, molluscs and certain prepared articles of food used by the Chinese and natives. So far, this relaxation in the precautions relative to the foods allowed to be sold does not seem to have had any harmful results.

Correspondence.

BRADYCARDIA.

Boston, Sept. 12, 1903.

Mr. Editor: I am pleased to read among the journals of late, an awakened interest in bradycardia, about the pathology of which we seem to have a great deal to learn. The difficulty for the general practitioner is a real one so far as treatment is concerned, at least at the present time. I have had a patient with this condition of slow pulse under my care, off and on, for two years. The patient is a man of sixty-seven years, with a pulse of 24, regular, of medium tension; he was never sick in his life, as he says, but for the past year the sight leaves his eyes momentarily, and he has learned the trick of standing as erect as possible, making his spine rigid to find relief — "in a minute 'tis all gone."

He has a burning feeling over his heart — by this he means in the skin, "nothing to do with the stomach." This "burning" only exists when he is working, his occupation being street cleaning, and he imagines the whole side is coming out at this part. At times he falls forward, as the scars on his head testify, and just as soon as he strikes the ground, he gets right up again and recovers his "senses." It must not be inferred from his use of the word "senses" that he loses consciousness. What he means is "that the blood stops" in his head. He cannot lie on his left side, for he has a feeling of oppressive "weight on his heart." He cannot stoop down without being dizzy. His brachial arteries are tortuous, locomotive, and may be well called pipe-stem arteries; these are the only arteries that are so affected. The cardiac apex impulse is in the sixth interspace, a finger's breadth outside the nipple line. On light percussion cardiac dullness does not begin until the fourth costal cartilage is reached. The right border of the heart is apparently at the mid-sternal line. He feels perfectly well but for this burning over his heart and these attacks of falling and the sight leaving his eyes momentarily, as above mentioned. I stopped his work for a while, and put him on iodide of potash, which gave him relief for a time, but its good effects did not continue. I made a very careful examination again, and then found a slight edema of both ankles scarcely observable to the man himself, but there it was unmistakably. I put him on digitalis, moderate doses, and cautiously, with much benefit. The man said his feet never swelled until he stopped work, or he never noticed if they did. This may be so. I think idleness would not benefit him as much as moderate work, and I have advised him to seek such, and abandon the more laborious street cleaning. If I had not sought carefully and found the slight edema above mentioned, I would be at a loss to know what medicinal treatment of such a case should be given. The digitalis helps my patient, and he is taking it cautiously right along. The description "*Pouls lent permanent avec attaques syncopales et epileptiformes*" applies to this man's case very nicely.

John J. Hanley, M.D., M.R.C.S. (Eng.)

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 5, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	—	—	—	—	—	—	—
Chicago . . .	1,885,000	464	165	36.96	8.02	2.95	27.53	4.64
Philadelphia	1,378,537	—	—	—	—	—	—	—
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	147	47	35.37	4.08	2.72	12.24	4.08
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	128	—	44.53	7.81	1.56	14.06	9.37
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	83	34	27.71	3.61	2.41	20.48	—
Boston . . .	603,163	208	86	37.02	4.80	1.44	18.27	3.36
Worcester . .	132,044	42	8	19.04	4.76	—	11.90	—
Fall River . .	115,549	42	25	40.47	11.90	—	38.09	—
Lowell . . .	101,959	34	20	44.11	11.76	—	—	4.76
Cambridge .	98,639	23	8	21.74	—	—	17.39	—
Lynn	72,497	20	—	20.00	—	5.00	5.00	—
Lawrence . .	69,766	20	8	20.00	5.00	—	15.00	5.00
Springfield .	69,389	—	—	—	—	—	—	—
Somerville .	68,110	13	2	23.10	7.70	—	7.70	—
New Bedford	67,198	30	13	56.66	—	3.33	30.00	—
Holyoke . .	49,286	11	5	45.45	—	—	27.27	—
Brockton . .	44,873	7	4	14.30	—	—	—	—
Haverhill . .	42,104	19	2	33.33	8.33	—	8 33	—
Newton . . .	37,794	11	4	63.63	—	—	27.27	9.09
Salem	36,876	11	5	18.18	9.09	—	—	—
Malden . . .	36,366	7	2	57.20	—	—	28.60	—
Chelsea . . .	35,876	13	7	—	—	—	—	—
Fitchburg . .	35,069	—	—	—	—	—	—	—
Taunton . . .	33,656	16	7	18.75	—	—	12.50	—
Everett . . .	28,620	4	3	—	—	—	—	—
North Adams	27,862	9	6	33.33	—	—	11.11	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	5	2	60.00	—	—	40.00	—
Waltham . .	25,198	1	—	—	—	—	—	—
Brookline . .	22,608	3	—	33.33	—	—	—	—
Pittsfield . .	22,589	—	—	—	—	—	—	—
Chicopee . .	21,031	4	3	25.00	25.00	—	—	25.00
Medford . . .	20,962	5	2	20.00	20.00	—	—	—
Northampton	19,883	3	1	—	—	—	—	—
Beverly . . .	15,302	—	—	—	—	—	—	—
Clinton . . .	15,161	3	—	33.33	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	4	0	—	50.00	—	—	—
Woburn . . .	14,300	—	—	—	—	—	—	—
Hyde Park .	14,175	7	1	14.30	—	—	14.30	—
Adams . . .	13,745	4	—	75.00	—	—	25.00	25.00
Attleboro . .	13,677	1	—	—	—	—	—	—
Marlboro . .	13,609	4	2	50.00	—	—	25.00	—
Melrose . . .	13,600	3	1	—	33.33	—	—	—
Westfield . .	13,418	5	2	20.00	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	2	—	—	—	—	—	—
Framingham	12,534	6	3	33.33	—	—	33.33	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	1	1	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	3	1	33.33	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 1,419; under five years of age, 480; principal infectious diseases (smallpox, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 503, acute lung diseases 87, consumption 136, scarlet fever 6, whooping cough 10, cerebrospinal meningitis 6, smallpox 15, erysipelas 1, measles 4, typhoid fever 52, diarrheal diseases 243, diphtheria and croup 27.

From whooping cough, Baltimore 1, Pittsburg 2, Boston 3, Salem 1, Newton 2, Westfield 1. From erysipelas, Pittsburg 1. From measles Chicago 1, Pittsburg 1, Providence 2. From smallpox, Pittsburg 15.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Aug. 22 the death-rate was 15.7. Deaths reported, 4,548; acute diseases of the respiratory organs (London) 120, whooping cough 54, diphtheria 35, measles 84, smallpox 2, scarlet fever 36.

The death-rate ranged from 4.0 in Hornsey to 32.6 in Bootle; London 14.4, West Ham 14.1, Brighton 12.9, Portsmouth 15.2, Southampton 18.5, Plymouth 16.8, Bristol 11.7, Birmingham 16.4, Leicester 14.0, Nottingham 19.3, Bolton 22.6, Manchester 19.5, Salford 20.3, Bradford 15.5, Leeds 15.8, Hull 21.3, Newcastle-on-Tyne 21.8, Cardiff 13.0, Rhondda 13.9, Liverpool 22.1, Reading 6.9, Bootle 13.7.

METEOROLOGICAL RECORD.

For the week ending Sept. 5, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	We'th'r * 8.00 A.M.	We'th'r * 8.00 P.M.	Rainfall in inches.
S. . 30	30.13	58	60	56	89	97	93	N E	N E	24	20	R.	R.	.53
M . 31	29.97	58	62	53	97	92	94	N	N W	14	3	R.	O.	.19
T. . 1	29.99	68	77	58	84	83	84	N W	S W	5	9	O.	C.	0
W . 2	30.12	67	74	60	94	88	91	N W	S	3	5	O.	C.	0
T. . 3	30.16	62	66	57	100	92	96	S	S E	4	10	G.	C.	0
F. . 4	30.09	72	84	60	87	88	88	W	S W	9	12	C.	C.	0
S. . 5	29.93	74	82	65	93	100	96	S W	E	8	5	O.	R.	.66
☞	30.06		72	58			92							1.38

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

SOCIETY NOTICE.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The thirty-first annual meeting of the American Public Health Association will be held at Washington, D. C., beginning Oct. 26 and continuing for five days.

THE PRIZE ESSAY OF THE AMERICAN MEDICAL ASSOCIATION.

THE AMERICAN MEDICAL ASSOCIATION offers annually a gold medal, value of $100, for the best essay on any subject relating to medicine or surgery. The recipient of this prize will be given the option of the gold medal, or a bronze replica of the medal and the balance of the appropriation (about $90) in money, or the entire amount ($100) in money.

Inasmuch as the Association annually sets apart the sum of $500 for original research, this prize is offered to stimulate the production of a superior practical paper, based either upon experimental studies or clinical investigation, or both. The committee will give preference to papers having the greatest brevity consistent with thorough consideration of the subject, and recommends that the paper shall not exceed 5,000 words. The committee, while not restricting the choice of subjects, recommends as an important subject for consideration, "The Therapeutic Value of the Digestive Ferments."

Competing essays must be typewritten, and bear no mark revealing their authorship; but instead of the name of the author there must appear on each essay a motto, and accompanying each essay a sealed envelope containing the name of the author and bearing on its outer surface the motto of identification. No envelope will be opened by the committee until a decision has been reached as to the most deserving essay. The other essays will be returned to their respective authors. The committee reserves the right to reject all essays if none are found worthy of the Association medal. Competing essays must be in the hands of the chairman of the committee not later than April 1, 1904.

LEWIS S. MCMURTRY, Louisville, Ky., Chairman.
BURNSIDE FOSTER, St. Paul, Minn.
M. H. FUSSELL, Philadelphia, Pa.

Committee.

RECENT DEATHS.

LUIS P. WALTON, M.D., a well-known New York physician, died suddenly of cardiac disease at the Bath Club, London, on Sept. 8. He was graduated from the College of Physicians and Surgeons, New York, in 1870. He was an Englishman by birth, and was buried at Kensal Green Cemetery on Sept. 14.

NORTON FOLSOM, M.D., M.M.S.S., died in Cambridge, Sept. 12, 1903, aged sixty-one years.

JOSEPH PEARSON OLIVER, M.D., M.M.S.S., of Boston, died in Paris, France, Sept. 11, 1903.

BOOKS AND PAMPHLETS RECEIVED.

A Text-Book of the Diseases of Women. By Thomas A. Ashby, M.D. Illustrated. Baltimore: Williams & Wilkins Company. 1903.

Original Articles.

THE ILL HEALTH OF FRANCIS PARKMAN.

BY GEORGE M. GOULD, M.D., PHILADELPHIA, PA.

(Continued from No. 12, p. 309.)

Farnham writes as follows:

He passed through at least four severe crises of pain and disability within a period of twenty years. The extent of his sufferings is nowhere revealed, only hinted at in writing; he is remembered, however, by an intimate friend or two to have said that death would often have been a welcome end of his trials. Generally he passed acute attacks either in turning his thoughts and conversation to light and jocose topics, or in silent and patient endurance. Once, when his physican, during a bad attack, encouraged him by saying that he had a strong constitution, Parkman replied quaintly, "I'm afraid I have." There is nothing to tell of these crises beyond the patience and fortitude with which he endured them. Sometimes, however, he felt so strongly that he had had more than his share of suffering, that a fresh attack would cause him to explode in a few very forcible expressions; then his quiet patience soon regained the mastery.

Parkman has said:

From a complete and ample experience of both, I can bear witness that no amount of physical pain is so intolerable as the position of being stranded and doomed to lie rotting for year after year. However, I have not yet abandoned any plan which I ever formed, and I have no intention of abandoning any.[8]

Driven to horticulture. — With a productive ability limited to about six lines a day, and the use of "the gridiron" to do so much, even Parkman's stout heart was daunted. But he met fate most courageously, and the manner of doing it again shows plainly the lesson to be found in his previous experiences. That he was not an eager and spontaneous nature-lover is clear from the fact that the woods were left by him unvisited for forty years after that phase of the reaction had passed in his youth.[9] That he cared nothing for chemistry comes out in the fact that he never busied himself with it a minute after the enthusiasm of his boyhood had passed. That travel and journeys among Indians, etc., in search of materials for his histories was not demanded by the historical mind is again manifest that the "Oregon Trail" had exhausted that necessity. All these, his rage for athletics and similar facts, demonstrate that these methods of spending energy served the sole purpose of satisfying the demands of his nervous mechanism for an outlet for derouted energy. They were caught up compromises with the compelling demon, who denied legitimate and logical obedience, forced the boy and the man to a morbid and excessive activity in any way that circumstance pointed. But at every step in life there was the growing impossibility of carrying out the ideal, even by the most abnormal energies or the most pathetic self-renunciation. Only the tragedy of Carlyle's similar life and experience can be compared with that of Parkman, and in exquisite poignancy Parkman's seems the more awful. Just as all previous attempts to meet the ingravescent evil had been morbid methods of disposing of the energy of the reflex ocular neurosis, which was his abiding source of mischief, so now Parkman was compelled to turn his attention to horticulture. From 1851 to 1865 there was published no considerable work; a novel and a book of verses gave glimpses only of the imprisoned soul crying out in the night. His sister tells me that during these years not all preparations for historical work were renounced. Something was always going on, at least in his mind.

His biographer says of him that as to his health he showed a commendable docility when advised by his physicians, but that "in one particular he persistently refused obedience — he would not give up his literary labor wholly, even when the doctors forbade it under threats of the most serious consequences; and when they told him to prepare for death, he straightway prepared to write books." At last, however, driven entirely to the wall, being unable to use his eyes even to sign his name, he adopted horticulture as an outlet for his energy and to fill the time with some occupation as close to his hand and as interesting as possible.

When able to walk he would go at a rapid gait from place to place, and sit down on a stool carried for the purpose; he would then do some of the lighter work, such as sowing seeds, planting borders, weeding and cultivating. . . . Sometimes the sensitiveness of his eyes prevented him from being out of doors in the sunlight. He acquired great fame as a horticulturist.

There are abundant evidences that he was not profoundly interested in this subject, and all his botanical successes and fame did not keep his mind's eye from the one aim of his life to which he returned so soon as his eyes and health permitted.

Fighting it out with "the enemy." — Parkman was accustomed to anthropomorphize the hidden sources of his physiologic evils as "the enemy" or his "cerebral devil." He had no mind to be defeated in the battle, and least of all to acknowledge defeat. Lamed though he was, his brisk step and alert manner made a French friend call him by the nickname of the *cerf agile*. "He could never abide weakness," says Farnham, "either physical, mental or moral; men, women, opinions, emotions, to command his admiration must show strength and energy." "Even when confined to his wheelchair he would split wood, hoe in the garden, rake or cut grass,

[8] Farnham was doubtless justified in quoting as having a personal significance and application a passage from Parkman's novel:

"It is but a weak punishment to which Milton dooms his ruined angel. Action, enterprise, achievement, — a hell like that is heaven to the cells of Ehrenberg. He should have chained him to a rock and left him alone to the torture of his own thoughts; the unutterable agonies of a mind preying on itself for want of other sustenance. Action! mured in this dungeon, the soul gasps for it as the lungs for air. Action, action, action! — all in all! What is life without it? A marsh, a quagmire, a rotten, stagnant pool. It is its own reward. The chase is all; the prize nothing."

And how personal are his reflections on the prospect of no escape from his misfortunes:

"Yet it is something that I can still find heart to face my doom; that there are still moments when I dare to meet this death-in-life, this slow-consuming horror, face to face, and look into all its hideousness without shrinking. To creep on to my end through years of slow decay, mind and soul famishing in solitude, sapped and worn, eaten and fretted away, by the droppings of lonely thought till I find my rest at last under these cursed stones."

[9] It is surprising that he should never once have sought the wilderness during forty years after his trip to the Rocky Mountains. His lameness naturally made travel in the woods difficult; yet he often journeyed far to collect historic material. But it is probable that he loved the adventures of a wild life more than the wilderness itself; and therefore neither the woods nor the prairies had of themselves power to attract him after his infirmities denied him perfect freedom in physical activity. Certainly he drove on his literary labors in spite of obstacles, with a persistence, courage and energy that would have enabled him frequently to visit the wilderness had the love of nature been his dominant passion.

etc." "One day in talking over a biographical notice in which a friend had dwelt on the historian's feebleness, he exclaimed, 'Damn it, I'm not feeble!'"

Shortly after the death of his wife he went abroad, and spent the winter of 1858–59 in Paris, at the Hôtel de France et de Bath. His brain was then in such a condition that the most eminent specialists of Paris warned him against insanity and forbade him all literary labor; but while spending his time chiefly in observing the life of the streets from the tops of omnibuses, he yet managed to make some investigations in the archives and to arrange for the copying of documents. Returning to Boston without any improvement in his alarming condition, he joined the family of his mother and sisters.

1868 was a year of exceptional suffering, rendering all work impossible, although he accepted election as overseer of Harvard College. Finding that complete idleness now seemed necessary, and preferring Paris to any other place for such a life, he went abroad for the winter, establishing himself in lodgings at No. 21 Boulevard Saint Michel. Here he was vainly sought after by some of the writers of Paris and the élite of the Faubourg St. Germain. In the course of the winter his health improved sufficiently to enable him to enjoy sightseeing and even make some researches, so that at his return in the spring of 1869 he resumed his labors and saw "La Salle" through the press.

In 1886 he camped a month with me. . . . His lame knee. . . . He could not walk enough to do more than fire a few rounds in camp at a target. . . . His infirmities never allowed him to make the journey a second time.

His maladies compelled him in 1888 to resign his office of Fellow of the Corporation of Harvard after a service of thirteen years.

The close of Parkman's life was both happy and characteristic: his work done, his reputation still in the ascendant, his friends increasing in number and appreciation. He had always hoped to die before reaching the lingering weakness and decrepitude of old age, for such a soul could not but dread anything that even pointed towards a diminution of power. When a friend once spoke with pride of the work he had done, his energy flamed out with the promise to do still more if he should live. His last summer was a very happy one; comparative freedom from pain and the absence of anxiety as to the completion of his work brought both comfort and peace.

He had phlebitis of the leg in 1892, and for the first time he was then compelled to take to his bed.

On coming in from his last row, on a Sunday, he felt ill and took to his bed. Peritonitis set in, but he rallied so much by Tuesday evening that a successful surgical operation was thought possible. This hope had to be dismissed when he began to sink on Wednesday morning. He died peacefully about noon of that day, on the 8th of November, 1893.

Parkman's method of carrying on literary work. — The following quotations seem necessary to give the student of this case an adequate sense of the difficulties and cost of Parkman's ocular abnormality. They are from the autobiography:

He then entered upon the subject of "France in the New World," a work, or series of works, involving minute and extended investigation. The difficulties which met him at the outset were incalculable. Wholly unable to use his eyes, he had before him the task, irksome at best when there is no natural inclination for it, of tracing out, collecting, indexing, arranging and digesting a great mass of incongruous material scattered on both sides of the Atlantic. Those pursuing historical studies under the disadvantages of impaired sight have not hitherto attempted in person this kind of work during the period of their disability, but have deputed it to skilled and trusty assistants, a most wise course in cases where it is practicable. The writer, however, partly from the nature of his subject and his plan, though in special instances receiving very valuable aid, was forced in the main to rely on his own research. The language was chiefly French, and the reader was a girl from the public schools, ignorant of any tongue but her own. The effect, though highly amusing to bystanders, was far from being so to the person endeavoring to follow the meaning of this singular jargon. Catalogues, indexes, tables of contents in abundance were, however, read, and correspondence opened with those who could lend aid or information. Good progress had been made in the preliminary surveys, and many books examined and digested on a systematic plan for future reference, when a disaster befell the writer which set his calculations at naught.

This was an effusion of water on the left knee.

In the severer periods of the disorder, books were discarded for horticulture, which benign pursuit has proved most salutary in its influences. One year, four years and numerous short intervals, lasting from a day to a month, represent these literary interruptions since the work in hand was begun. Under the most favorable conditions, it was a slow and doubtful navigation, beset with reefs and breakers, demanding a constant lookout and a constant throwing of the lead. Of late years, however, the condition of the sight has so far improved as to permit reading, not exceeding, on the average, five minutes at one time. This modicum of power, though apparently trifling, proved of the greatest service, since, by a cautious management, its application may be extended. By reading for one minute, and then resting for an equal time, this alternate process may generally be continued for about half an hour. Then, after a sufficient interval, it may be repeated, often three or four times in the course of the day. By this means nearly the whole of the volume now offered has been composed. When the conditions were such as to render systematic application possible, a reader has been employed, usually a pupil of the public schools. On one occasion, however, the services of a young man, highly intelligent, and an excellent linguist, were obtained for a short time. With such assistance every difficulty vanished, but it could not long be continued.

How far, by a process combining the slowness of the tortoise with the uncertainty of the hare, an undertaking of close and extended research can be advanced, is a question to solve which there is no aid from precedent, since it does not appear that an attempt under similar circumstances has hitherto been made. The writer looks, however, for a fair degree of success.

In the second letter he said: "While engaged on these books, I made many journeys in the United States and Canada in search of material, and went four times to Europe with a similar object. The task of exploring archives and collecting documents, to me repulsive at the best, was under the circumstances difficult, and would have been impossible but for the aid of competent assistants working under my direction."

In writing his second letter he said: "Taking the last forty years as a whole, the capacity of literary work which during that time has fallen to my share has, I am confident, been considerably less than a fourth part of what it would have been under normal conditions."

Farnham adds:

In looking at the great mass of manuscript he collected and digested, one partially realizes by the material evidence of mere bulk how much he did for the sake of thoroughness, but fully only when one remembers the weakness of eyes and brain that increased his labors tenfold. In the preface to "A Half Century of Conflict" he thus referred to his collection at the close of his labors:

"The manuscript material, collected for the preparation of the series now complete, forms about seventy volumes, most of them folios. These have been given by me from time to time to the Massachusetts Historical Society, in whose library they now are open to the examination of those interested in the subjects of which they treat. The collection was begun forty-five years ago, and its formation has been exceedingly slow, having been retarded by difficulties which seemed insurmountable, and for years were so in fact. Hence the completion of the series has required twice the time that would have sufficed under less unfavorable conditions."

While he was in the Law School his sister Miss Eliza S. Parkman remembers that he was ill in bed, and that she began at this time reading to him. She does not know of what he ailed at that time. She was his helper in his literary labors for much of the remainder of his life. Whenever he was able to do any such work it was usually as follows: He made his notes, if able to do so, in the method stated, by writing for a minute or two and then stopping to look at a distance to rest his eyes. He prepared for his dictation by thinking, and usually while lying on his back upon a lounge. He went to his room at nine o'clock in the morning, and if he could dictate for an hour it was considered a good day's work. He could not generally continue so long, a half-hour in the forenoon and less in the afternoon being all he could get through with. He usually held a screen before his eyes while dictating. At first he used no notes while dictating, but later he constantly consulted them. He could only read at best but a few minutes, generally but one or two, and he never did any reading or writing whatever at night. He habitually avoided looking at any one or at any object steadily. In any sort of literary work, or even while being read to, he would often have to stop with the remark that his head was all "stirred up." A continuous noise tormented him and quiet was always desired. His power to read or write seemed to depend upon his eyes rather than upon his head.

Parkman's estimate of his own case. — It is evident that the mystery of his own ailment weighed so deeply upon his mind that it gave him the strong incentive needed to break over his natural reserve and disinclination to speak of himself. This mystery, he felt, must some time be solved, and the autobiographic letter was his attempt to hand to some aftercomer a document giving so far as in him lay the facts of his strange disease. It must be remembered that it was written in 1868, just prior to his going abroad for medical advice and historical research. It was sealed and inscribed as "not to be used during my life." These are the opening sentences:

> Allusion was made at the outset to obstacles which have checked the progress of the work, if the name of obstacles can be applied to obstructions at times impassable and of such a nature that even to contend against them would have been little else than an act of self-destruction. The case in question is certainly an exceptional one; but as it has analogies with various other cases, not rare under the stimulus of our social and material influences, a knowledge of it may prove of use. For this, as for other reasons, the writer judges it expedient to state it in full, though in doing so much personal detail must needs be involved.

In the introductory note he had said:

> It resulted from a desire — natural perhaps, but which may just as well be suppressed — to make known the extreme difficulties which have reduced to very small proportions what might otherwise have been a good measure of achievement. Having once begun it, I went on with it, though convinced that it was wholly unsuited to see the light. Physiologically considered, the case is rather curious. My plan of life from the first was such as would have secured great bodily vigor in nineteen cases out of twenty, and was only defeated in its aim by an inborn irritability of constitution which required gentler treatment than I gave it. If I had my life to live over again, I would follow exactly the same course again, only with less vehemence.

In this recognition of "an inborn irritability of constitution" which defeated his life purpose, Parkman puts his finger, or rather points it, to the heart of the mystery. Again the same inerrant perception appears in his words:

> It was impossible that conditions of the nervous system, abnormal as his had been from infancy, should be without their effects on the mind, and some of these were of a nature highly to exasperate him. Unconscious of their character and origin, etc.
>
> . . . . . .
>
> Though the seat of derangement may be the nervous system, it does not of necessity follow that the subject is that which, in the common sense of the word, is called "nervous." The writer was now and then felicitated on "having no nerves" by those who thought themselves maltreated by that mysterious portion of human organism. This subterranean character of the mischief, early declaring itself at the surface, doubtless increased its intensity while it saved it from being a nuisance to those around.

None to whom was hidden the truth of the cerebral and psychic effects of great eyestrain could more accurately describe the tormenting mystery of his case than Parkman has done in the foregoing citations. By this time in his life he was able to see the folly of his athleticism and especially of the "Oregon Trail" to overcome "the enemy," concerning which he now wrote:

> As to the advantages of this method of dealing with that subtle personage, some question may have arisen in his mind, when, returning after a few months to the settlements, he found himself but ill adapted to support his theory.

In 1851 he was confined for two years by "an effusion of water on the left knee." And Parkman adds:

> The effects of the confinement were as curious as unenviable. All the irritability of the system centered in the head. The most definite of the effects produced was one closely resembling the tension of an iron band, secured around the head and contracting with an extreme force, with the attempt to concentrate the thoughts, listen to reading or at times to engage in conversation. This was, however, endurable in comparison with other forms of attack, which cannot be intelligibly described from want of analogous sensations by which to convey the requisite impressions. The brain was stimulated to a restless activity impelling through it a headlong current of thought, which, however, must be arrested and the irritated organ held in quiescence on a penalty to avert which no degree of exertion was too costly. The whirl, the confusion and strange, undefined torture attending this condition are only to be conceived by one who has felt them. Possibly they may have analogies in the savage punishment once in use in some of our prisons, where drops of water were made to fall from a height on the shaved head of the offender, soon producing an effect which brought to reason the most contumacious. Sleep, of course, was banished during the periods of attack, and in its place was demanded, for the exclusion of thought, an effort more severe than the writer has ever put forth in any other cause. In a few hours, however, a condition of exhaustion would ensue; and, both patient and disease being spent, the latter fell into a dull lethargic stage far more supportable. Excitement or alarm would probably have proved wholly ruinous.

This account is so incomparably accurate and descriptive of the cerebral effects of severe eyestrain that it may be incorporated in textbooks. Innumerable patients have perhaps less exactly but with the same intent and vehemence, and in similar terms, described their symptoms to their

oculists. The "iron band about the head," the vague but intolerable anguish, the "whirl," the "confusion," the "strange, undefined torture," "all the irritability of the system centered in the head" — such are precisely the expressions used by these sufferers. And these symptoms disappear with proper glasses.

The so-called heart trouble. — In 1844 Parkman referred to "a painful beating of his heart." Farnham says that some thought his sudden journey to Europe in 1844 on account of ill health was a trouble of the heart resulting from overstrain in the gymnasium at Harvard. Parkman in his diary, in 1844, speaks of the "cursed injury that brought me to Europe," adding, "as I find no great improvement, I judge it best to see what a French doctor can do for me, instead of running about Spain."

Farnham adds:

> This affection, however, does not seem to have been a persistent trouble; it did not prevent him, even at that time, from walking, climbing mountains and ascending cathedral spires as only a vigorous man can do; and the malady does not figure among the chronic troubles of his after life. There is no subsequent mention in his diaries either of disease or medical treatment.

The matter is of no medical importance except to note that, as with several of the other cases studied, this patient also had for a time his cardiac worry.

Rheumatism and lameness. — The arthritis of the knee came on in 1851, and for two years he was unable to walk much. In 1852 he had to be carried out of the house when starting on his trip to the water cure establishment in Northampton, Mass. For many years his lameness did not prevent free walking at times nor horseback exercise; he used also to do what digging and other work he could in his garden. Fortunately his arms remained serviceable till very near the close of his life, so that he could generally enjoy some form of exercise with them. Even when confined to his wheelchair he could split wood, hoe in his garden, rake or cut with a sickle the grass along the walks; he even did some carpenter work in making foot benches or other objects of utility. During much of his later years he was obliged to use canes or crutches and to carry a stool when working in his garden. Disliking eccentricity of all kinds, he was much annoyed at having to walk in the streets in his peculiar manner; yet he would not give up exercise or social intercourse so long as he could enjoy them by any means whatever. The pain and the loss of freedom caused by his lameness led him for a time to consider amputation of the leg; but the relief hoped for was too doubtful to justify the operation. When rheumatism finally came in the shoulders and stopped the last of his out-of-door exercises, he accepted massage, practiced deep breathing and such other movements as could be executed in a chair.

Wheelwright says of his lameness in his later years:

> Long years afterward, when crippled by disease and needing two canes to support his step, he might often be seen in the streets of Boston, walking rapidly for a short distance, then suddenly stopping, wheeling around and propping himself against the wall of a house to give a moment's repose to his enfeebled knee. Whatever he did, he must do it with all his might. He could not saunter, he could not creep; he must move rapidly or stand still. On these walks in the country he often carried his rifle, "Satan." He also did some rowing on Fresh Pond.

Even when his life work was practically over, when completed presbyopia allowed him to enjoy more reading and an untortured brain, the fates would still not relent. There was an exacerbation of the knee trouble, and this, keeping him from exercise, led to an increase of insomnia, etc.[10]

During the last years of his life his lameness was so troublesome that he had an elevator in his house which he was able to operate by his own arms, and in this way he went up stairs and down. This intercurrent affection has of course no significance as regards the disease-producing ocular condition, except that it confined him more, and thus increased his tendency to read or write, which at once resulted in a heightening of his cerebral and nervous reflexes.

Parkman's insanity. — The collocation of the words "Parkman" and "insanity" arouses a scornful smile. Insanity was as impossible to that splendid and sound mental and cerebral mechanism as to any in the world. The best proof is that the awful irritation, insult, injury and strain which it endured did not cause it to swerve from its perfect poise and self-control for a minute. And yet the absurd suspicion was entertained by some, and with the thought Parkman was forced to play. He never seriously believed in the theory, but he could play with it as only an eminently sane mind can with such things. Like all eyestrain sufferers, like those especially we have studied, Parkman had the greatest need, physically, mentally and particularly ocularly, of much out-of-door life and exercise. The irritable reflexes from the eyes were always surcharging the battery of his brain,

[10] For illustration of this period I cannot forbear quoting a letter kindly given me by Dr. Oliver. It is as follows:

SARAGOSSA, SPAIN, 14 April, 1887.

My dear Dr. Oliver, — Excuse the pencil scrawl. Persistent sleeplessness and the fatigue of travel on the damned Spanish trains, which go chiefly by night, has made my head too shaky for a pen. Since landing I have slept, when stationary, from two to four hours, with two favorable exceptions of five or six hours each (helped by chloral and bromide). I am sorry not to report more brilliant results. I should hope, however, for better luck were it not that the old lameness in my left knee — the result of water on the knee thirty-six years ago — has mysteriously returned after leaving me tolerably in peace for more than twenty years. The consequence is that I cannot walk above a few moments at a time without pain. Sometimes I can scarcely walk at all. This has lasted eight or nine days, and, though it fluctuates a good deal, it has not yet improved. Hence my plans are upset. As I lose ground here, and as traveling by rail is excessively difficult under the circumstances, I have beguiled Coolidge — who is the most disinterested of men — into making a straight course for the Mediterranean coast. We hope to find a steamer at Barcelona to carry us to Gibraltar, whence, if things improve with me, we will go together to Grenada, etc. But if the lameness continues, I see no use whatever in remaining on this side of the water. Therefore, unless there is perceptible improvement, I shall probably take a steamer at Gibraltar either directly for New York or indirectly by Southampton.

Yours very truly,
F. PARKMAN.

Postscript:

BARCELONA, 17 April.

Change of plan. No available steamer here for Gibraltar. Lameness rather worse. Mean to start for Paris by day train. When there if lameness is in a better way than now, I mean to go at once to Schlangenbad. If on the other hand it shows no signs of improvement, I shall take passage for Boston, since living alone at Schlangenbad with no possibility of exercise cannot conduce to health. This cursed lameness is a thing which neither you nor I could foresee and which changes the whole situation. Yours, F. P.

which, chronically in a state of overtension, needed the physical exercise and the ocular rest. His captivity from lameness must have been grievous to bear, and he sought compensation for it in many ways. There is another reason why his lameness must have greatly embittered his mind, although he alludes to it but once. When the war broke out in 1861, what suffering it must have caused him that he could not join the army! What a general he would have made!

This virtue (cheerfulness) had exceptional value in his case, because of his *inherited affection* of the brain; and he was fortunate in early coming to the belief that insanity often begins in moods and mental conditions that at the beginning can be avoided. (Farnham.)

Of course we now know that Parkman had no "inherited affection" and no "affection of the brain." The same superfluous insinuation is shown in Farnham's "The overstrain of his early life was most regrettable in helping to develop some inherited tendency to disorders of the brain and nervous system." There was no more "overstrain of his early life" than thousands of others have endured unharmed. What overstrain there was had no causal relation with his lifelong suffering. He had no "inherited tendency to disorders," and he had no "disorders of the brain and nervous system." Farnham is correct when he writes of Parkman, "He had an 'inborn irritability of constitution,' as he said, which made 'labor a passion and rest intolerable.' His mysterious affection of the brain seems to have consisted in good part of this spurring force." To have hit the truth so patly and to have missed it so completely is strange when every fact of Parkman's life tragedy was glaringly bound up with ocular function.

Miss Parkman in a personal communication to me says she judges that the symptoms that suggested insanity were pressure upon, in or about the head, his "stirred up head" and the rushing activity of the brain. All these are most common symptoms of eyestrain.

Farnham, in another place, says:

His most insidious enemy was brain trouble. His physician in Paris, the most noted specialist of his day, had said that he might go insane and that his cure was extremely doubtful. The wisdom of making known this diagnosis to the patient has been questioned; but it perhaps was the only course, in view of the precautions that had to be an important element of his daily life. In his autobiography he speaks of the medical opinions and his danger in the jocose way frequent with him in mentioning even his worst condition. But the inevitable weighed at times upon his mind. He occasionally expressed wonder at not going insane with so much nervous exhaustion from insomnia, and he asked one or two intimate literary friends to watch for signs of mental disorder in his writings.

Parkman doubtless enjoyed the fun of setting two friends upon such a quixotic hunt! Of a similar chase by expert sportsmen, Parkman himself wrote:

One physician, with grave circumlocution, lest the patient should take fright, informed him that he was the victim of an organic disease of the brain which must needs dispatch him to another world within a twelvemonth; and he stood amazed at the smile of an auditor who neither cared for the announcement nor believed it. Another, an eminent physiologist of Paris, after an acquaintance of three months, one day told him that, from the nature of the disorder, he had at first supposed that it must, in accordance with precedent, be attended with insanity, and had ever since been studying him to discover under what form the supposed aberration declared itself, adding, with a somewhat humorous look, that his researches had not been rewarded with the smallest success.

Mr. Parkman's home physician, Dr. Oliver, writes me that he thinks it was Brown-Sequard who made the statement that there was danger of insanity, and who told Parkman to go home at once, as he would soon be out of his mind. The "danger" was very far from "weighing on Parkman's mind," however puzzled he might be as to the mysterious nature of his malady. Thank heaven the sane mind and heroic character of the man "neither cared for the announcement nor believed it."

Parkman's insomnia.— Farnham has written of the "Oregon Trail" journey:

Suffering as he did from troubles of digestion, he was unable to sleep during the night; when at dawn he dozed off exhausted, his guide had to call him to depart. Thus began the insomnia that wearied him persistently all the rest of his days. From that time onward, during long periods of time, he would get but two or three hours of sleep out of the twenty-four; he often had less than this, or even none, and when four or five hours of unconsciousness came, he enjoyed an unusual blessing. His confidence in nature made him doubtful of physicians and drugs, and gave him most hope in the natural powers of the body. Insomnia so prolonged and persistent was one of the greatest of his physical trials; it indeed seemed that insanity must at last result from this exhausting and irritating form of suffering.

His sister, Miss Eliza S. Parkman, told me in regard to the insomnia that to sleep none at night was uncommon, to sleep about an hour was common and latterly under his physician's advice, and, by the aid of sulphonal, trional or some other hypnotic, to get from four or five hours of sleep was possible. Oculists are now well aware by the reiterated statements of their patients that almost all severe eyestrain produces insomnia. The irritated and surcharged brain, "stirred up" as Parkman described it, during the day cannot be quieted, and the healing power of rest is denied the very organ that brings healing to the rest of the organism.

Parkman's eyes.—Although the method of Zadig is the method of symptomatology and diagnosis, neither the numerous physicians he consulted during his life, nor the patient himself, neither his relatives nor friends, recognized that he had five symptoms which among others are common in eyestrain. These are, in order of their distinctness, redness of and pain in the eyeballs; photophobia, or sensitiveness to light; blepharitis, or inflammation of the edges of the eyelids; inability to use the eyes "at near range," — reading or writing,— and sundry cerebral reflexes, whenever this near use was attempted. The reverse of this order is that of importance, and the fact is suggestive of the dullness of perception and slowness of recognition of the rôle of eyestrain in medicine and in all modern life.

(1) Miss Parkman tells me that her brother did not have what would be called "bloodshot" eyes. In Parkman's nature physical and neural matters never went to the positively fatal ex-

tremes. A wise restraint even in the severest disorders prevented the fatal exaggerations. He stopped in time. But he had red and painful eyes. The pain in the eyes was nearly constant.

(2) *Photophobia.* — In the two pictures of Parkman given in Farnham's biography one will notice that across the coat lapels and shirt front are the lines made by a loop of cord passed about the neck and disappearing beneath the coat. It is striking that few remember his use of these lenses, but this is a common fact, illustrated by many historic cases, notably that of the musician Wagner. Farnham does not speak of the fact that Parkman (as told me by his sister) habitually or often wore eyeglasses after middle life, and he also wore colored glasses when the light was strong. The colored lenses were the old-fashioned "goggles," with wire meshes about the glass. The silk cord was not, of course, used with these. He chose northern rooms for his studies, and when traveling; he disliked reflections of light from other houses, walls, etc., and he chose the shaded portions of the room to sit in, or kept the room itself in a twilight condition of illumination. According to Miss Parkman he was more comfortable in cloudy weather. His eyes, while in Switzerland, gave out entirely in sunny days, and he was especially liable to attacks of cerebral irritation ("stirred up head") during such days. At Blois, France, Miss Parkman remembers that in 1871 he could not walk out in the daytime at all, and driving in the dark was disliked because it strained his eyes and seemed to hurt him to attempt (as he felt impelled to do) to see objects. He therefore was able to be out of doors only in the twilight. Light or multiple lights arouse accommodative effort, and, as we know, Parkman's accommodation was always strained to its utmost. For this reason he never went to the theater, opera, concerts, lectures, etc. His photophobia also doubled his suffering in another way, as it prevented the life out of doors, which he needed so much. He was confined, therefore, to a vicious circle — his sensitiveness to light confined him too much, thus intensifying his ocular and brain irritation, and in its turn making light still more harmful to the eyes. Patients with severe eyestrain showing the reflexes to the head and eyes most commonly complain of this dread of light, and in many cases it is a source of bitter suffering and trouble. Parkman himself thought he could not repeat his "Oregon Trail" experience because the sunlight would have blinded him. Glasses correcting his ametropia would have banished his photophobia instantly. A curious fact in this connection is his use of orange-colored paper for writing upon in the last part of his life. I have known three patients with severe eyestrain who chose such paper, and who believed that its use was almost necessary for their comfort in writing.

(3) *Blepharitis.* — Farnham writes that "his gray, penetrating eyes were, in youth, of good size, but in later years they seemed smaller because of chronic inflammation of the lids." Miss Parkman tells me that she often noticed "scales" on the lid edges and that he had "irritable lids." She also says he habitually used some lotion, probably solutions of boric acid and camphor (now constantly ordered by physicians for such lid affections), usually applied at night. I have learned that he was subject to another result of eyestrain, the lid tumors called "meibomian cysts." Two of these were excised by two of his oculists. Parkman never winced during the operation. Farnham makes an excusable error in supposing the narrowing of the palpebral opening, which he calls smaller eyes, was due to the lid affection. It was, of course, due to the habitual attempt to shut out the painful light by partially closing the lids. In this way the width of the opening of the lids was chronically reduced, and he seemed to have "smaller eyes." All albinos have the same appearance and from the same habit. Although Parkman was not a myope, it may be noted that the word "myopia" is derived from Greek words which mean to close the eyes. The reason that myopes also habitually narrow the lid opening is a different one.

Even in England it is now and at last recognized that blepharitis is usually due to eyestrain, so that whatever palliative measures may be ordered for scaly and ulcerous lid edges, all oculists now tell their patients that the only permanent cure of the condition is properly correcting lenses of the ametropia.

(4) *Inability to use the eyes at near range* is the most glaring symptom of eyestrain. It now seems to us incomprehensible that even in Parkman's early and adult life he, and especially his physicians, should not have recognized that the cause of this anomalous and tragical fact lay in an abnormalism of the optical functions of the eyes. The vast majority of his friends and of all civilized people could work at sewing, reading, writing, and other hand work, and for many hours a day without resultant symptoms and in complete unconsciousness. Parkman shirked study as a boy, as a student and as a young man and each year of added life lessened his accommodative power and narrowed his ocular working ability, until finally this was reduced to a minute or two at a time, and in all to a half hour or so a day.[11] Finally came the "gridiron" period, when he could not even write his name without pain, and he had to renounce all near-range work whatsoever. With the most sympathetic imagination one cannot realize the awfulness of such a fact to a man of Parkman's tastes and will. Ten years of my own life lost in the same way, and from precisely the same causes, help me to understand the workings of the mind of Parkman under this terrible blow of a mysterious fate. If Parkman had lived at the present time he could have found the relief from his disability and suffering in the same way that thousands have done. "The pity of it!"

[11] I have a suspicion that in some cases, especially in such intense natures as that of Parkman, there may be some eyestrain even in dictating with eyes closed. The effort to visualise (and that is the usual mechanics of intellect) the images and sentences might arouse both convergence and accommodation of the eyes, and thus during composition and nonwalking intellectual activity there would not be entire ocular rest.

(To be concluded.)

THREE CASES OF TUMOR OF THE CEREBELLUM.[1]

BY JOHN JENKS THOMAS, A.M., M.D., BOSTON.

It having been my fortune to have the opportunity to observe recently three cases of tumor of the cerebellum, in two of which the diagnosis was confirmed by autopsy, it seemed to me that a report of these cases might not be without interest to this society.

The first case was in an adult. The patient, Lizzie B., aged twenty years, was referred to me by Dr. Edmund W. Clap of Boston, to whom I am indebted for much information about the condition of the eyes, and who has kindly permitted me to report the case. She was first seen by me on April 9, 1900. She was a dressmaker, single, and was born in England. The family history was of no significance, though her father had had an attack of hemiplegia in January of that year. There was a history of her having a fall and hurting the head when a baby, and when very young she had had the measles, but no other injury or illness.

Her present illness began in the preceding October with headache, which was both frontal and occipital. Three weeks before her first visit she had had an attack of vomiting, and also one on that day, and about the same time she noticed a blurring of the vision. The headache is throbbing in character and practically continuous, but perhaps slightly worse in the morning, and it is increased by stooping. The vomiting is not projectile in character. There has been no diplopia, no convulsive movements or twitching of any part of the body, or attacks of unconsciousness. There has been no paresthesia or numbness. Dr. Clap wrote that he saw her first on April 4, five days before her first visit to me, and at that time she had a violent neuro-retinitis in both eyes, with numerous flame-shaped hemorrhages and some exudate. The disk was swollen at least two diopters. On the 7th the swelling of the disk had increased to three diopters, and there was more exudate. The macular region was not much affected, although there was slight edema. Vision O. D. was 20-40, not improved by any glass. Vision O. S. was 20-30 with + 0.75 = 20-20.

On examination the gait is normal except for a slight limp at times, which is due to a blow upon the hip which she received not long ago. There is only slight swaying on standing with the eyes closed. The pupils are normal to light and accommodation. There is no diplopia, and no affection of any of the cranial nerves. The watch is heard at an equal distance, 15 cm., from each ear. There is no paresis of any of the extremities, and no inco-ordination. Sensation to touch, pain, heat and cold is everywhere normal. The reflexes in the arms are equal and normal. The knee jerks are lively and equal. There is a front tap contraction on both sides, but no ankle clonus. There is no tenderness of the head to percussion or pressure. The urine and the heart are normal, and the patient is not anemic.

She had been taking the yellow iodide of mercury in doses of a quarter of a grain three times a day. On April 14 Dr. Clap wrote me that the vision had fallen greatly. Vision O. D. was 6-200, not improved by glass. Vision O. S. was 20-200; with + 1.0 = 20-100. The neuritis then was a marked choked disk, with four to five diopters of swelling in each eye, and a few hemorrhages out in the retina as well as many in the nerve head. There was much exudate extending out from the disk in both eyes. The macular region was edematous in both eyes, which was probably the cause of the low vision. No change was found in her general condition upon examination April 20. She was then put upon the red iodide of mercury, grain 1-16 t. i. d., and the iodide of potassium in increasing doses. In a few days after this she returned to England, and I am indebted to Dr. Mark Farrant, Jr., of Exeter, England, for a report of the further progress of the case, which he kindly sent to me. Writing on July 27, 1900, he states that at first he found nothing more than we had previously found. At first the knee jerks were active and equal, but soon the left one became rather diminished. The vomiting continued. The vomiting varied with the pain in the head, that is, when one was severe the other was. There were no localizing signs at all, and no ataxia. This continued until the middle of May, when there was an almost complete intermission of the symptoms, which lasted until the beginning of July, when they returned. On July 17 ptosis of the left eye and dilatation of the left pupil appeared. About that time the vomiting ceased, but the patient became dull, and finally died in semi-coma on July 20. For the last ten days there was a little fever, reaching 101.6° as the highest on the 17th. The temperature previously had been nearly normal, and a good deal of the time subnormal. The pulse kept about 70 to 80 until just before death, when it was noted as 160.

A post-mortem examination was obtained, and Dr. Farrant found the pia slightly thickened and opaque, especially along the vessels and in the ventricles. There was an excess of cerebrospinal fluid, and the brain was fairly firm, with the convolutions much the usual shape, not flattened. There was a firm tumor, about the size of a large walnut, in the posterior and bi-ventral lobe of the cerebellum on the right side. It shelled out easily. It had not extended to the superior vermiform process, which Dr. Farrant suggests was the reason why we had no ataxic symptoms. The tumor under the microscope showed a large amount of fibrous tissue, with much round cell tissue, presumably, Dr. Farrant says, a fibro-sarcoma.

The second case, Herbert N., a boy five years old, was referred to me by Dr. Durant of Haverhill. The family history was entirely normal. The labor and the development of the child was normal in every respect, except that when one and a half years old and again at two and a half years he had a few slight convulsions, six in all.

[1] Read before the Boston Society of Psychiatry and Neurology, Dec. 18, 1902.

The longest lasted three minutes. They apparently consisted of a slight loss of consciousness only, as the parents noticed no movements of the limbs, and each had been preceded by some indiscretion in diet. Aside from this the child had always been well except for occasional digestive trouble. In November, 1901, he fell and cut the head. He was seen by me first on April 30, 1902. Nine weeks previously, about the last of February, he began to feel poorly and vomited, and there was fever of 103°. He improved for a week and then became worse. At this time there was no fever, but he began to have headache and vomiting. There was some vomiting in the morning, and the child was very constipated. For the three weeks previous to his first visit to me the headache had been better, but for the preceding week he had not been willing to walk, and the parents had noticed some staggering for some three and a half or four weeks. About two and a half weeks before they had noticed that the left eye turned in. No failure of his vision had been noticed. There was certainly no marked mental dullness, and the child noticed everything going on about him as usual. There had been no convulsions, and the hearing was good.

On examination there is considerable unsteadiness in standing and sitting. The pupils are large and react sluggishly to light and accommodation. There is marked optic neuritis in both eyes, with swelling of the disk and tortuous veins. There is a paresis of the left external rectus muscle; no nystagmus, although there is a slight twitching of the eyes at times. There is also a slight but distinct paresis of the muscles of the left side of the face. The watch is heard in each ear at the same distance, 30 cm. Air conduction is better than bone conduction in both ears, and Weber's test is negative. The tongue is protruded straight. The knee jerks are absent, there is no ankle clonus and no front tap contraction. The abdominal and cremasteric reflexes are normal. There is slight inco-ordination and slight tremor of the hands, but this is not marked. There is slight tenderness of the occipital region to light percussion, and the circumference of the head is 55 cm. The pulse is 108.

Operation was declined by the parents. Later the child was seen by Dr. F. H. Williams, who took x-ray pictures of the skull, which he kindly allowed me to see, but these showed nothing definite.

The father reported on June 9 that the child for some time had had no headache, and that the vomiting had lessened, but that he did not seem to see as well, and had lost strength. At this time arrangements were made for an operation.

On June 14 Dr. Lund and I, on seeing the child previous to the operation, learned that twenty-four hours previously he had become markedly dull. On examination the knee jerks were absent, as was also the plantar reflex. The right eye seemed to diverge to the temporal side and the right pupil was widely dilated. The nasolabial fold on the right side was less marked than on the left. The child was in a soporous condition, and could not be roused enough to protrude the tongue or make any voluntary motion. Upon consultation it was decided to operate with the hope of relieving the symptoms of intracranial pressure, leaving until later the decision whether to attempt removal of the growth, or any further procedure.

OPERATION. DR. F. B. LUND.

The patient lay on the right side with the head flexed. A ∩-shaped flap was made with the base at the superior curved line of the occiput on the left, the left limb starting at the posterior border of the mastoid and below the level of its tip, and the right limb extending down the median line of the neck to the same level. The incision was carried down to the bone, and the flap of skin, muscle and periosteum quickly dissected downward with a periosteum elevator. The occipital bone was very thin and bulged downward as if from a high degree of intracranial pressure. The external occipital protuberance could not be felt, in fact, there was rather a depression in its place, and the lines on the occiput and other landmarks on the thin and poorly marked skull were hard to find, apparently on account of the bulging of the skull from internal tension. The flap was carried backward nearly to the foramen magnum, and the hemorrhage was easily controlled by ligature of one or two branches of the occipital artery and veins, and pressure with gauze pledgets in the angle of the flap. A three-quarter inch trephine was applied to the occipital bone between the superior and inferior curved lines, and on removing the button the dura bulged, tense and without pulsation, through the opening. The opening was enlarged to a diameter of a little more than an inch with rongeur forceps, and a semicircular flap of dura was made with the knife and forceps. Edematous cerebellar tissue immediately protruded through the opening with such force that the brain was lacerated against the edge of the dura. A small portion of the tissue was removed for examination, but the condition of the patient precluding any further work, the dural opening was enlarged to the limit of the opening in the skull, and the operation completed by the suture of the periosteo-muscular flap with continuous catgut, and the skin with interrupted silkworm gut sutures. A drain of rubber tissue was left in the lower inner angle of the incision, and an aseptic gauze dressing applied. The patient suffered but little shock from the operative manipulations, which occupied about twenty minutes. Ether was the anesthetic, though owing to the semicomatose condition of the patient only a small amount was required. The pulse at the close was 160 to 180, as before the operation.

The patient did not improve. The coma gradually deepened, and he died at 5 A.M. the next morning, June 15. The examination of the pieces of tissue removed at the operation showed nothing but cerebellar tissue.

At the autopsy the head only was opened. The cerebrum showed nothing abnormal beyond a certain amount of flattening of the convolutions.

The posterior surface of the left lobe of the cerebellum was lacerated.

The vermis of the cerebellum is nearly replaced by a tumor mass which measures about 3 x 2 x 2 cm., and is slightly lobulated on the suface. About the tumor, which is sharply defined, was found a small amount of pus. At the posterior and anterior portions of the tumor, more on the right side, are seen some normal convolutions of the cerebellum. The tumor on section is rather soft, opaque, whitish in color, homogeneous, with here and there softened areas of varying size. The tumor mass has pressed upward and forward into the left cerebellar hemisphere, which shows a marked depression in which the tumor lies; but this hemisphere of the cerebellum appears perfectly normal, except for the marked compression.

Microscopical examination of fresh scrapings of the cut surface of the tumor shows many small mononuclear cells and a few fibrillæ resembling neuroglia cells and fibrillæ. The tumor was hardened in formalin and sections were made of the tumor, of the medulla at the upper border of the pyramidal crossing and of the left cerebellar hemisphere, and stained with hematoxylin and eosin, hematoxylin followed by picric acid and acid fuchsine, Mallory's phosphotungstic acid hematoxylin method for neuroglia fibers, Weigert's myelin sheath stain, Pal's myelin sheath stain followed by picric acid and acid fuchsine, by Marchi's method and by Mallory's connective tissue stain.

The sections of the left lobe of the cerebellum show no changes, except the distortion from the compression.

The sections of the medulla show no changes, except that in the sections stained by Marchi's method there are seen many myelin sheaths which show black drops replacing the sheath or in its periphery, or occasionally a black circle completely replacing the sheath. Fully one-third of all the fibers are affected, and the degeneration is about equal throughout the medulla, no tracts or areas of the medulla appearing more affected than others.

The sections of the tumor show numerous large and small blood vessels, which are without regular arrangement. These are accompanied by a considerable amount of connective tissue, and here and there bands of connective tissue are seen in the tumor substance without any apparent relation to blood vessels, but there is no connective tissue stroma or capsule. The tumor is composed of a closely packed mass of small round or oval cells, with little cellular protoplasm, and oval or round nuclei, which, in general, are distinctly vesicular, though many of them are quite dense and stain deeply and nearly homogeneously. Mitoses, while somewhat rare, are found occasionally. Among the cells are seen a very few neuroglia fibers, and here and there are small areas, with very few nuclei, composed of neuroglia fibers, most of which, however, stain poorly. Larger and smaller necrotic areas are seen often, scattered throughout the tumor.

Anatomical diagnosis.— Glioma of middle lobe of the cerebellum.

The third case is a somewhat uncertain one, though I feel fairly confident that it also is one of tumor of the cerebellum, though the diagnosis was not confirmed by any post-mortem examination.

The patient, Jeanette S., three years and four months of age, was seen by me first on Jan. 26, 1902. The family history was good, except that the mother's grandmother had died of phthisis, and that the same disease had occurred three generations before in the father's family. The child was one of twins, the other child being healthy, as also one younger child. The birth and development had been normal. The only illness had been measles in the summer of 1901. In May of 1901, nine months before, it was noticed that she was inclined to fall, usually backward. No headaches had been noticed. The child complained simply of being tired. She was perfectly bright, and there had been no mental impairment and no convulsions. She had had six attacks of rather severe vomiting. No failure of sight had been noticed.

On examination there is slight staggering and unsteadiness in walking and standing. The circumference of the head is 53.2 cm., and the occiput is rather large. The head is not sensitive to light percussion. The pupils are equal, and react to light and upon accommodating. The external ocular muscles are normal, and there is no nystagmus and no strabismus. There is no paresis of the face or extremities. There is considerable inco-ordination of the movements of both arms and legs. The knee jerks are increased and equal. There is also ankle clonus and Babinski's sign on both sides. The optic nerve appears normal, though it is difficult to obtain a good view of the fundus.

On March 3 the circumference of the head had increased to 54.3 cm., and the patient seemed more unsteady. The optic nerve appeared normal. There was no paralysis anywhere, and the reflexes were the same as at the previous examination. On May 26 there had still been no headache, and the vomiting had been absent for some weeks. The circumference of the head had increased to 55.2 cm., but the inco-ordination in the use of the hands was less, though the child was still very unsteady on standing, but she could stand and with support could even take a few steps. There was no strabismus or nystagmus and no facial paresis and no change in the reflexes. On Aug. 19 the circumference of the head had increased to 56.0 cm., and the parents thought the child had not seemed as well for the week previous, and she had vomited once or twice. The inco-ordination had not diminished, but no new symptoms were present.

Dr. H. K. Faulkner of Keene, N. H., under whose care the child had come, very kindly wrote me in regard to the ending of the case. He stated that the child had remained much the same all summer, though she could not walk, until, on Oct. 14, he was called to see her for what the

parents thought a cold. He found her with edema of the lungs, the pulse 130, temperature 101.5° and respiration 32. There was slight occasional paralysis of the external motor muscles of the eyes, the pupils were dilated, contracting slowly and incompletely to accommodation. The child was unconsicous, and remained in this condition for ten hours before death came. This case for a long time seemed to me to be a doubtful one, and I was inclined to look upon it as one of hydrocephalus; but the sudden termination with symptoms of increased intracranial pressure, and with paralysis of the ocular muscles, make it seem fairly certain that this case should be classed with the two preceding ones as a case of tumor of the cerebellum.

In two of the cases reported the symptoms were very indefinite, and in the first case for a long time it was impossible to say more than that we had to do with an intracranial new growth, as none of the characteristic symptoms of cerebellar tumor were present, unless the ptosis, which appeared three days before death, can be so regarded.

The second case cannot be considered to throw any light upon the chance of success of operation in these cases, as the operation was done *in extremis*, yet it may not be without advantage to note that in this case we had to deal with a glioma of the cerebellum and yet one that was sharply defined and that could have been easily removed by an early operation if it had been in a more accessible part of the cerebellum. It should also be noticed that in this case the diagnosis of location of the tumor upon the left side from the involvement of the cranial nerves upon that side did not lead us astray, as the tumor although in the middle lobe of the cerebellum, had grown almost entirely into the left hemisphere. It is well, however, to note that the conclusions from the involvement of the cranial nerves towards the last, when the patient was in an unconscious condition, would have been misleading, as at that time the right oculomotor nerve was affected, and possibly the right facial, though this was uncertain, as it was impossible to produce any contraction of the facial muscles either voluntary or emotional. In this case it is possible that the injury to the head from a fall which occurred a little over three months before the rather sudden onset of the symptoms may have been an exciting cause of the growth of the tumor, though it seems to me that the interval is rather too great for this to have been the case where we have what was evidently a rapidly growing tumor, judging both from the course of the disease and the histological examination. The entire duration of the disease from the first onset of the symptoms was in this case only about fifteen weeks. In this case we obtained no further light upon the possibility of the diagnosis of the position of intracranial growths from the use of the x-ray, because the pictures were unfortunately taken in such a position as to prevent the comparison of the two sides of the cerebellum.

In two of the cases, the first and the third, we should note the curious intermission in the symptoms, in the first case for a period of about six weeks and in the other for a still longer time, though in this case the most troublesome symptoms, the ataxia and difficulty in walking, did not change materially during the course of the disease.

Another point which should be noted is the condition of the knee jerks in these cases. In the first case the knee jerks were lively and there was a front tap contraction when the case was first seen, and the knee jerks remained the same until far along in the course of the disease, when Dr. Farrant reports that the left one became diminished. The tumor was found in the right side of the cerebellum. In the second case the knee jerks were persistently absent, and the diffuse acute degeneration found in the medulla could hardly account for this condition, as might have been the case if only certain tracts connected with the cerebellum had been found affected. Unfortunately, the autopsy not being a complete one, an examination of the lumbar portion of the cord was impossible. In the third case the knee jerks were increased and there was double ankle clonus and Babinski's sign was present, which I considered to be evidence of pressure upon the motor tracts from increased fluid in the cerebral ventricles. Certainly this case if it were one of cerebellar tumor does not bear out the statement often made that the knee jerks are generally absent in these cases. The diminishing of the knee jerk upon one side only in the first case is, however, suggestive that this disappearance of the knee jerks so often noted in tumor of the cerebellum, as in our second case, is not a mere accident, but the effect of impairment of function of some cerebellar tract affecting this reflex.

TUBERCULOSIS OF THE SPINE. A STATISTICAL STUDY OF THE CASES IN THE ORTHOPEDIC DEPARTMENT OF THE CARNEY HOSPITAL.

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

THE following cases are reported in the hope that the facts as presented, even though incomplete, may be of some value to those interested in this class of disease. The analysis includes all of the cases of tuberculosis of the spine which were treated at the Orthopedic Department of the Carney Hospital in the eight years previous to 1902. The cases in which there could be any question of the diagnosis have been excluded. These represented many cases which in the early years of the clinic, before the spinal diseases were better understood, were considered to be tubercular ostitis, but which later experience showed to be osteo-arthritis, disease of the mesenteric glands, osteo-myelitis, etc.

There are many facts which would be of value in this report but which cannot be included, owing to the imperfect condition of the early records, and because of the impossibility of locating many of the cases in order to obtain a final examination.

In all, 108 cases applied for treatment in the

period mentioned. Of these, 46 failed to carry on the treatment which was prescribed, and were lost sight of. The remaining 62 have been kept under observation and followed the treatment with more or less consistency, and have all recently reported as to their present condition. The interval which has elapsed since the initiation of the treatment averages in these cases 2.1 years, and of this number (62) 36 were males and 26 females.

The ages have been arranged in decades, and as no cases under twelve years of age were treated, there were no representatives of the first period. Twenty-seven cases were from 10 to 19 years of age; 14 cases from 20 to 29; 12 cases from 30 to 39; 4 cases from 40 to 49; 3 cases from 50 to 59; 2 from 60 to 69.

Duration of the disease. — When first seen 18 of the cases had suffered from deformity or other symptoms for a period of one year or less; 16, 1 to 5 years; 11, 6 to 10 years; 6, 11 to 20 years; and 4, above 20 years.

Complications. — In 20 cases there was one or more discharging sinuses at some period of the disease. Of these 20 cases at last report, 8 were improved, the sinus having closed in almost every case; 4 were in poor condition; and 8 were dead.

In 11 cases paraplegia to a varying degree occurred at some period in the disease. At last report the paralysis had disappeared in 7 cases; in 2 this facture was not noted; and 2 were dead.

Results.—At last report 20 were entirely free from symptoms, and the disease was apparently quiescent, with resulting deformity of varying degree. In 18 cases the condition is greatly improved, but in 13 cases there has been no improvement, and the present condition of the patient is poor. Eleven of the cases are dead. Two of these, both of many years' standing, died of intercurrent affections, and of the remaining 9, the cause of death in 4 cases was given as Pott's disease and in 5 as Pott's disease and phthisis. Of the fatal cases, 2 were between 10 and 19 years, 4 between 20 and 29 and 5 between 30 and 39 years of age. The shortest interval from the first symptoms to date of death was less than one year, the longest six years, the average four years. Five were complicated by phthisis, 2 were paraplegic and in 5 there was abscess formation with accompanying discharging sinus.

Conclusions. — The report represents a consideration of all of the cases of Pott's disease which applied to the Orthopedic Department of the Carney Hospital prior to 1902. In all there are 108 cases, of which number 62 reported more or less regularly for treatment. Of this number (62) 41 were under 30 years of age, and in 21 of the cases the disease had existed for from 6 to 20 years before applying for treatment. In 20 cases there was abscess. Of this number 8 died and 4 are at present in poor condition.

In 11 cases there was paraplegia, and of this number 2 died.

Of the 62 cases 11 died, and in nearly all death was due to the extension of the disease locally or to some other part of the body, the average time between the onset of the disease and the time of death being four years.

In considering the report it is to be remembered that the cases here studied are entirely hospital patients, living for the most part necessarily under poor hygienic conditions. A similar number of private cases studied would possibly and probably show more favorable results.

A NOTE ON THE ASSOCIATION OF A RISE IN SYSTOLIC BLOOD PRESSURE WITH THE ONSET OF PERFORATIVE PERITONITIS IN TYPHOID FEVER.

BY JOHN BRADFORD BRIGGS, M.D., BALTIMORE, MD.,

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During the past two years I have frequently observed a sharp rise in systolic blood pressure, as measured by a modified Riva-Rocci sphygmomanometer, occurring in patients undergoing laparotomy, and produced by mechanical irritation of the peritoneum. Dr. Harvey Cushing suggested that a similar rise in blood pressure might possibly be produced at the onset of intestinal perforation in typhoid fever, by the mechanical and chemical irritation due to the extravasated bowel contents, and might prove of value in the early recognition of typhoid peritonitis. It was soon found, from the observations of Dr. Cook and myself, that patients suffering from acute general or rapidly spreading peritonitis, from whatever origin, uniformly showed, unless in moribund condition, a state of hypertension of the pulse. Similar observations have been made and reported by Dr. G. W. Crile,[1] and the association of high systolic blood pressures with general or rapidly extending peritonitis may be regarded as a constant one. It remained to study the development of the increased pulse tension in these conditions, and with that object in view we have in the past year kept a close watch on the state of the blood pressure in many of the typhoid patients admitted to Dr. Osler's service in the Johns Hopkins Hospital. In two patients, out of a large number followed, abdominal symptoms justifying exploratory laparotomy have arisen, and the relation in each of these of the symptoms to the blood pressure has been of the greatest interest. It is with the idea of stimulating further observations along this line during the approaching "typhoid season" that brief notes of the two cases are here reported.

Case I. The patient was a young white man, admitted about the end of the second week of a typical attack of typhoid fever of considerable severity. His condition was not good, and he soon became delirious. The temperature was high, there was no diarrhea and no intestinal hemorrhage. The abdomen was soft and natural, and remained so during the ten days following admission. During that time from 20 to 200 measurements of systolic blood pressure were made each day, for purposes not connected with the present subject. The pressures ranged from 98 to 115 mm. Hg., with a general downward tendency as the disease progressed, and never rose as high as 120 mm. Hg., except within the hour

[1] Journ. Am. Med. Assoc., May 9, 1903.

following the administration of strychnia hypodermically. At 8 P.M. on the night of Jan. 16, the blood pressure was found to be 106 mm. Hg. At midnight it was 144 mm. Hg. (same observer), the patient's abdominal condition being the same as it was four hours earlier, — absolutely negative with regard to pain, tenderness, rigidity of the muscles or distention. At 4 A.M. the next morning the patient cried out suddenly with severe pain in the abdomen, and was found with knees drawn up, restricted respiratory movements of the abdomen, great tenderness over the right lower rectus muscle and some muscular rigidity at the same point. The signs developed rapidly, and about five hours later laparotomy was done, two perforations being found low down in the ileum. There was rapidly spreading peritonitis with some pus in the pelvis. There had been no sudden drop in the temperature, and the leucocytes had shown no change in frequent counts. The blood pressure remained high, falling slightly in the hours just before operation, but never approaching its pre-perforative level.

CASE II. A young white woman, very well nourished and with slight general arterio-sclerosis, in the fifty-seventh day of a severe attack of typhoid fever. For six weeks the blood pressure had been carefully followed, and had ranged between 104 and 125 mm. Hg., following a rather high level for so severe an attack. Three weeks before the patient had several intestinal hemorrhages. She had passed through one intercurrent relapse, and at the time of the development of grave abdominal symptoms was at the end of the first week of a relapse following two days' apyrexia. Temperatures had been very high, the pulse rapid, and there was slight tympanites; there was low muttering delirium, especially at night, but the patient could be roused to answer questions intelligently. For some days there had been occasional complaint of abdominal pain, never at all extreme, and there had been some tenderness on deep palpation, never well localized. Leucocytes had ranged constantly below 7,000. During the night of the fifty-sixth day there was sudden rapid increase in the abdominal distention. The complaint of pain in the abdomen became more constant and insistent, and the tenderness on palpation increased markedly, while remaining fairly general. The thighs were not flexed, and there was no outcry, and apparently no paroxysmal pain. Abdominal distention progressed, and could not be relieved by turpentine by mouth and locally applied, nor by enemata. The pulse rate was from 150 to 172 per minute, the general condition bad, and evidencing a profound toxemia. Leucocytes rose rapidly to 17,000 at noon of the fifty-seventh day, when in view of the increasing severity of the abdominal signs and symptoms, operation was decided upon. Though the diagnosis was not positively made, it was considered by the surgeon who saw the case "that in the absence of signs of hemorrhage into the bowel, perforation had probably occurred, with extravasation of intestinal contents."

The patient's blood pressure had been carefully recorded. During the relapse it had ranged slightly below 120 mm. Hg., and during the period of abdominal symptoms it followed the same level, rising occasionally as high as 125 mm. Hg. as the result of free stimulation with strychnin and digitalin. In the absence of any fall in blood pressure, it was very improbable that any retained intestinal hemorrhage had caused the abdominal symptoms. The absence of any considerable or abrupt rise in blood pressure, on the other hand, was considered by the writer to be positive evidence that perforation had not occurred, and to justify the expression which I made of that opinion before operation. At 3.20 P.M. the abdomen was opened by an ample incision through the right rectus muscle, under cocaine anesthesia. The intestine was carefully examined, but no perforation could be found, and there was no peritonitis, aside from a light coating of filmy fibrin over the bases of two ulcers low down in the ileum.

The first case was remarkable in that the blood-pressure rise, characteristic of typhoid perforation, occurred so long before the onset of any other suggestive symptoms. At operation the condition of the peritoneum was such as to cause the comment that its inflammation was apparently eight or ten hours old; which would correspond almost exactly with the first observed rise in blood pressure, and not at all with the sudden onset of abdominal pain. I am convinced that perforation in this case had already occurred when the first high blood pressure was noted. It is conceivable that the extravasation at that time was entirely among intestinal coils, and that subjective pain was not felt until the resultant inflammation had extended to the parietal peritoneum. The case suggested to Dr. Cushing the advisability of determining experimentally in animals whether a blood-pressure-raising peritoneal reflex can be elicited which is not associated with sensations of pain.

In the second case the evidence given by the blood pressure was entirely negative. The objection was made during the consideration of the case that the low blood pressure might be due to the profound toxemia; the vasomotor center (and periphery) being perhaps unable to respond typically to peritoneal afferent impulses. That the vasomotor irritability of the patient was not in abeyance was proven by the fact that shortly before operation she reacted to painful stimulation of the skin by characteristic transient elevations in blood pressure, while central stimulation with strychnin also produced a decided and more lasting increase in pulse tension. It seems certain, then:

(1) That patients with general or rapidly spreading peritonitis have constantly, at least in the early period, abnormally high blood pressures.

(2) That in perforative peritonitis a sharp rise in blood pressure *may* precede the onset of other symptoms.

(3) That in doubtful cases, like my second one, where perforative peritonitis is suspected, and the general previous blood-pressure level is known, the course of the blood pressure after the onset of grave symptoms should receive consideration in determining the propriety of operation.

It is to be hoped that the few observations so far recorded will be amplified by other workers in the coming autumn. In general hospitals, at least, it is easily possible to keep run of the blood pressure in all typhoid patients with bi-daily or more frequent determinations with the Riva-Rocci instrument. In this way it will be possible to have valuable data at hand in case of the development of intra-abdominal mischief, when the subsequent more frequent measurements of pulse tension will prove of greater value than if the patient's usual blood-pressure level were unknown. Rapidly rising blood pressures in cases with developing abdominal symptoms will probably prove more significant than any later stationary pressures, at whatever high level. It is the curve of changing direction in a well-plotted blood-pressure chart, rather than the position of that curve with reference to the base line of zero pressure, that should first challenge the attention of the clinician under these conditions.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND W. D. HALL, M.D., BOSTON.

THE USE OF THE X-RAY IN TRACHOMA.

MAYOU[1] shows that by means of the x-rays we can set up a leucocytosis with minimum destruction to epithelial and other tissues, and by it we can produce inflammation from a very slight leucocytosis to actual gangrene of the part, which, with care and experience, may be under perfect control. As we do not know the organism which causes trachoma, we cannot say whether the irritants which are used in its treatment or the x-rays have any effect on it. But we have in the x-rays a method of producing leucocytosis in any degree of severity, from that following a mild application of perchloride of mercury up to that induced by jequirity, and further, this leucocytosis is much more prolonged than that in any method previously adopted and the destruction is not nearly so great. Although the granules disappear rapidly under the x-rays, operative methods which remove the diseased tissue must be preferred to some extent. The x-rays, however, may be used to complete the work in preference to other irritants now in use. Operations, however, should never follow x-ray treatment until after a considerable lapse of time. The author reported the first case early in 1902. At that time it was the custom to cover the whole face, with the exception of the affected eye, with a metal mask. (Since then he has discarded the mask altogether.) The upper lid is everted and the lower pushed up so as to cover as much of the cornea as possible, although in bad cases of pannus the cornea is exposed. He has never had any trouble with the globe following this treatment, and even in a case of rodent ulcer of the lid, in which the treatment was used for six months, there was only a conjunctivitis noticed, the patient's vision (six-ninths) remaining the same throughout. The patient is placed about nine inches from the anode, with a moderately soft tube and a current of six ampères. Two minutes' exposure from four to six days is given. If much injection, or if the case be acute, four are usually sufficient. After a week's rest, if there has been any reaction, the patient is exposed twice a week until the appearance of a slight photophobia. About this time the granules begin to disappear from the lids. Exposures are then carried on from one to three times a week, until they have disappeared, upon which all treatment must be stopped, as it requires several weeks for the infiltration set up by the x-rays to settle down, and it is difficult to tell whether the disease is eradicated until this injection has disappeared. The final results are very satisfactory, as, instead of the white, puckered conjunctiva there is a supple, non-contracted, non-scarred conjunctiva. Recent pannus then clears up with great rapidity, patients claiming to see more clearly even after the first exposure. Dense corneal opacity, however, requires some time. The granulations sometimes seem to disappear at the first exposure; others do not until after eight or ten. The chronic cases are most suitable for treatment and will stand more frequent exposures. Acute diffuse infiltrations, with lid thickening and photophobia, require much care and longer time. Old cases in which the lid trouble has nearly disappeared, but in which there is dense corneal opacities, will improve under exposure of long intervals after the first mild reaction. There is less deformity resulting, the treatment is practically painless and the pannus clears more thoroughly. It is especially suitable for hospital patients, who cannot attend daily.

Sydney Stephenson and David Walsh[2] refer to the only recorded case thus far of Mayou, and report four cases of their own, in all of which marked improvement was noticed. All were affected with severe trachoma, and corneal involvement in three of the cases. A twelve-inch Cox's coil was used, with the "Record" focus tube of the same maker. At first the apparatus was run with a strong battery and spring break, and afterwards by a Mackenzie-Davidson mercury break, together with current run direct from the main. The focus tube was "hard," with an average existence equal to a seven or eight-inch spark gap on the coil. The anticathode of the focus tube was placed at about eight inches from the eye, and the exposure was from ten to fifteen minutes. They used a mask of lead foil. An average current strength of five ampères and twenty to twenty-five volts was used. They state their results as follows: of the four cases of trachoma treated with the focus tube, the eyes appeared to be cured in two, while such improvement took place in the other cases as to promise equally favorable result with a continuance of the treatment. A slight superficial dermatitis of the lids was noted, and in one case it became a blister. The face was similarly affected once or twice. A moderate dermatitis occurred on the fingers and back of the hand of the nurse who held the lids everted during a four-inch exposure. A shield and mask of lead prevented any further mishaps of this kind. Other cases showed improvement from the first exposure. The immediate effect of the focus tube was to render the granular bodies redder and more prominent, followed by a stage of rapid absorption. Of the five eyes treated in the four patients, two appeared cured at the time of writing, while the others were on the road to cure. On the other hand, the three eyes untreated by the focus tube remain the same as when the patients were first put under this special treatment. During the focus tube exposures, the eyes not exposed have been treated daily with an antiseptic wash. The eversion or otherwise of the lids appears not to make the least difference, which is fortunate, as it is no light task for the operator to keep a child's lid everted for ten minutes at a time.

[1] The Lancet, Feb. 28, 1903.

[2] Med. Press and Circ., Feb. 18, 1903, and the Lancet, Jan. 24, 1903.

The apparent cure of the two eyes resulted from seventeen exposures in one case and from sixteen in another. With regard to the trachoma apparently cured by the high frequency current, the results were obtained after twenty-two applications. A twelve-inch spark coil was run from the main connection with a D'Arsenval high-frequency apparatus. One end of the solenoid was earthed, the other being connected with a vulcanite electrode, with which the closed right lids were gently massaged. A small brush discharge of about half an inch was obtained from the electrode. At times the orbicularis and the corrugator supercilii muscles were thrown into action. This is probably the first application of high frequency current to the eye. Treatment by the focus tube and by the high frequency current is painless, and it is common for the children to fall asleep. The rapidity of recovery is an important factor, and almost if not quite absolute safety may be claimed for both forms of treatment if applied with skilled hands. The application of the focus tube to the eye by an unskilled or careless person may, however, play havoc. In addition to surface burns, the eyelashes become thinner in some of the eyes treated by focus tubes. In one case, after ten exposures with everted lids, a small infiltration resembling an ordinary phlyctenular appeared in the lower quadrant of the corena, followed in the course of a week by several similar deposits, both of which developed into small ulcers.

PARAFFIN AFTER ENUCLEATION.

Dr. G. H. Suker[3] of Chicago employs paraffin injected into the scleral cup as a substitute for the Mules operation, or into the capsule cavity instead of the Frost-Lang method, or instead of the glass or gold ball method of Fox, and finally to take the place of such absorbable material, as agar, sponge, etc., as used by Claiborne and others. He considers the final result as far better, insomuch as there is practically no contraction due to cicatrical formation, resulting from absorption of the media employed. It may be mentioned, however, that there is a very slight absorption and contraction due to the vaseline, necessarily used with the paraffin, to obtain the required melting point and consistency. As a result of this, the paraffin may be said to become encysted and partially fenestrated. The paraffin can be injected immediately into the capsule cavity, after the hemorrhage has been stopped, or at some subsequent time. If at the time of the operation, pack the cavity with gauze and suture the wound, leaving a small opening at one end, through which the gauze may be withdrawn and the paraffin injected. By this means you can control the hemorrhage, a matter of great importance, and also better suture the cavity when packed. Careful coaptation is necessary in order to avoid oozing of the paraffin, as considerable force must be used at the time of injection in order to fill out the cavities. The reaction with edema and infiltration of the orbital and adjacent tissue will be considerable, but not more than is noticed in other methods of implantation. He prefers to inject the paraffin about a week after the primary operation, during which time the cavities are to remain packed with gauze, which can be removed through a small opening, and thereby will be obtained a firmer union of the edges of the wound and time for the edema infiltration to subside; besides, all hemorrhage will be absent. He thinks the greatest field for usefulness will be in the restoration of the sunken socket after a remote enucleation, the method of which is as follows: "After thoroughly cocainizing the socket and using freely adrenalin (1–1000), with a pair of tissue forceps, pick up the apex of the socket-pit; then with a narrow scalpel you enter the subconjunctival space at the apex to the extent of 3 mm.; then make an elliptical cut at about the point of entrance," thereby obtaining a pocket in both cul-de-sacs, with but a single opening. The higher you cut into the cul-de-sac, the more prominent will be the stump after the injection. After checking the trivial hemorrhage, inject about a drachm of paraffin, properly prepared, or enough to give the desired fullness, but do not overdistend the cavity, on account of the great pain, sloughing and probable ultimate expulsion of the paraffin. It is well to put a suture in place, in order to be able to close the opening immediately after the injection, as it will be difficult to do so afterward. The reaction is quite severe, but may be controlled by a cold pack. The artificial shell may be inserted within a week or ten days. Although the opening may not close readily, even though sutured, granulation will usually accomplish this. The paraffin used for this purpose is chemically pure, white and mixed with pure vaseline, in the proportion of 3-5 of the latter and 2-5 of the former, which mixture melts at 102° F., and does not solidify too rapidly. If the syringe is of proper construction so as to retain the heat for a length of time, and the tip is not of too fine a caliber, there will be no trouble about the injection. One advantage in using paraffin in this class of cases is that should one injection prove inefficient a second or third may be undertaken at a subsequent time. That excessive heat does not liquefy the paraffin when injected into the socket is shown by the fact that it has been used among men employed about furnaces. Neither do high fevers cause liquefying, because the vaseline being practically absorbed, the melting point is materially raised. Pure paraffin has a higher melting point than any patient may have under ordinary circumstances. The melting point may be regulated by the amount of vaseline added.

[3] Annals of Ophthalmology, January, 1903.

EMBOLISM AND THROMBOSIS OF THE CENTRAL VESSELS OF THE RETINA.

Panas,[4] reviewing this condition, states that, although sudden loss of vision, the characteristic

[4] Archiv. d'Ophtal, .October, 1902.

appearance of the arteries and dimunition in caliber of the veins, the cherry spot at the fovea and cloudiness of the surrounding retina, absence of signs of stasis and want of prominence of the papilla, suggest complete obstruction of the central artery by an embolus, still hemorrhage into the vaginal sheath and certain forms of acute retrobulbar neuritis may produce similar changes. After the lapse of a few months it becomes impossible to differentiate between an embolus and a thrombus by the microscope, insomuch as the majority of patients so affected are of advanced age or affected with some condition in which arterio-sclerotic changes, due to syphilis, alcoholism, diabetes,etc., are well marked. He has found that changes noticed in thrombosis are much more common than those caused by embolism, and in this opinion he claims to have been supported by an increasing number of authorities. Haab may be especially mentioned as supporting this opinon. Michel has demonstrated a number of cases of thrombosis of the retinal veins, and it has been noticed that out of fifteen such cases ten developed glaucoma within a few months after the onset of the blindness, tending to prove that the process in the veins was not primary but consecutive to disturbances arising from senile changes. Ischreyt reports complete obliteration of the nasal branch of the vein by a thrombus with foci of obliterating endarteritis in the eye removed for glaucoma. The diagnosis of venus thrombus depends upon the retention of some visual power, the alternating distention and contraction of the veins, the absence of the venous pulse, small caliber of the arteries and retinal hemorrhages near the disc. He considers the prognosis to be less serious than in cases of embolism. Little can be done in the treatment of this condition, but mydriatics should be avoided. Alcohol should not be used, but iodide of potassium in small doses may be prescribed.

THE PROGNOSIS IN VISUAL DISTURBANCE OF ELECTRIC ORIGIN.

Terrien[5] has collected forty-five cases of ocular disturbances resulting from exposure to intense light produced by short circuits. In only one case did the current pass through the body of the patient. He notices three classes of symptoms — inflammatory, functional and nervous. In the first are noted transitory redness and swelling of the skin and burns accompanied by conjunctival injection without great chemosis or edema, and followed frequently by mucopurulent secretion. He has noticed neither corneal involvement nor changes in the lens, but hyperemia of the iris and a neuroretinitis were frequently present. Of the functional disturbances, a dazzling, which came on almost immediately, its severity being directly dependent upon the intensity of the light and the individual susceptibility, was noted. Vision when affected usually improved in a few hours. There might be erythropsia. The diminution in vision was usually accompanied by contraction of the field. Seven per cent of the cases seemed to have sustained considerable and permanent impairment of vision. In 14% the visual loss was not so great. Asthenopic symptoms were frequent, and continued for some time. Hemeralopia was quite common, as was also photophobia. Of the nervous disturbances, the photophobia bore a direct relation to the degree of severity of the lesion. Cephalagia was quite constant early, while ocular and periorbital pain, often severe, came on at variable periods. Later, however, these pains were not continuous, were usually worse at night and might be entirely absent in mild cases. Tenderness of the globe and along the course of the supraorbital nerves occurred in severe cases. Blepharospasm was almost always present. The pupil, generally quite small immediately after the accident, recovered its normal size in a few days, although in severe cases mydriasis was sometimes present. Although the diagnosis is rarely a matter of doubt, where simulation is suspected an examination of the fundus and a diminution in the visual field will aid in determining the real condition. It is sometimes very difficult to say that it is not a case of traumatic hysteria. In making a prognosis, the duration of the symptoms is more important than the question of the degree of initial severity. Mydriasis, contracted fields, severe neuralgia and pain on pressure, tardy improvement of the vision are suggestive of a serious condition. As regards the treatment, the wearing of colored glasses interferes with return to work, and should therefore be ordered. For the ocular pains, cold compresses and cocaine may be tried; and for the neuralgia, one of the bromides, quinine and antipyrin. For the functional disturbances nux vomica, nitrate of amyl, lactate of zinc and electricity may be tried. Almost any procedure will, however, unfortunately be unsatisfactory.

(To be continued.)

[5] Archiv. d'Ophtal., November, 1902.

Reports of Societies.

AMERICAN THERAPEUTIC SOCIETY.[1]

Report of Meetings Held at Washington, D. C., May 11, 12 and 13, 1903.

Dr. Thomas E. Satterthwaite (New York) in the Chair.

The address of welcome was delivered by Dr. Robert Reyburn (Washington), Dr. R. W. Wilcox (New York), responding for the visiting members.

Presidential address by Dr. Satterthwaite:

RECENT ADVANCES IN MEDICAL THERAPEUTICS.

The greatest achievement of recent years has been the suppression of yellow fever in Havana by our Government Commission, consisting of Drs. Reed, Carroll, Lazear and Agramonte, appointed in 1901. They soon proved that the ste-

[1] Prepared exclusively for this Journal.

gomyia fasciata is the immediate host of the germ, and after eight months' work of extermination, yellow fever disappeared entirely from Havana, and, to the writer's knowledge, there has not been a case there since. Several diseases have recently become of interest to Americans on account of immigration from our new possessions. In the treatment of cholera, which is epidemic in the Philippines, Freer and Marshall obtained good results from benzoyl-acetyl-peroxide as an intestinal antiseptic. The guaiacol carbonate and calomel treatment has also been used, and appears to have reduced the mortality one-half. After reviewing the etiology of the plague and the history of the recent epidemic in San Francisco, Dr. Satterthwaite refers to treatment by the Yersin-Roux serum and Haffkine's prophylactic; the former gave satisfaction, but the latter appeared to be of doubtful value. Unless our colleges rise to the emergency, the government will be compelled to found schools of tropical medicine. The recent discovery of uncinariosis in our Southern States shows what an intelligent study of these affections will accomplish. After referring to the terrible mortality from tuberculosis, Dr. Satterthwaite discusses the advantages and cost of sanitorium treatment. Statistics prove its superiority for suitable cases. The expense at Bedford, N. Y., was found to be only 76.8 cents per day for each patient. Dr. MacDonald has treated patients in tent hospitals at even less expense. The method deserves further trial. A campaign of education is needed to teach the laity how to avoid consumption, and how to avoid giving it to others. Statistics show that we are already reducing the mortality. The mortality from typhoid also has been reduced from 20 to 10%. Abt, of Chicago, claims a mortality of only 5% in 40 cases in children, using benzoyl-acetyl-peroxide. Hirshfeld uses hot baths, and claims a reduction in mortality of over one-half. The mortality from diphtheria has fallen 50% since the introduction of the antitoxin treatment. In considering dosage, Dr. Satterthwaite states that in one case the administration of 92,000 units was followed by recovery. In the treatment of cardiac affections the tendency is to use indirect rather than direct methods; hydrotherapy, exercise, diet, tonics and purgatives are assuming deserved prominence, while the nitrites are substituted as far as possible for digitalis and similar drugs. Many surgeons now admit that simple acute appendicitis is best treated by internal medication, the chronic and relapsing forms calling for surgical intervention. The paper concludes with a plea for a central supervision of the materia medica supply. Pharmacists are not sufficiently controlled by the sanitary authorities. If we are losing faith in the efficacy of drugs, it is largely because of the wide difference in the drugs of commerce as regards purity and strength. Methods have been devised for determining the precise medicinal value of drugs, and all medicinal substances, before being put up for sale, should be subjected to these tests.

SYMPOSIUM: THE TEACHING OF THERAPEUTICS.

DR. REYNOLD W. WILCOX of New York, in introducing the subject, said that there is much room for improvement in medical school teaching. If post-graduate instruction is elementary at times, it is because of the necessities of those who demand it. When the undergraduate shall be brought to his doctorate as well equipped for treating as he is now for recognizing disease, the work of the post-graduate school will be post-graduate in deed as well as in name. He suggested the following topics for discussion as indicating causes of failure in the past: (1) A practical acquaintance with remedial measures and remedies, and methods of preparing the latter. (2) A knowledge of their action acquired by experimentation and demonstration under the teacher's eye. (3) Their application to diseased conditions, under proper supervision. (4) The rational and logical prescription of remedies and physical agencies.

ON THE TEACHING OF PHARMACOLOGY AND THERAPEUTICS IN OUR MEDICAL SCHOOLS.

DR. JOHN J. ABEL (Baltimore). The great value of laboratory experimentation is evidenced by the brilliant discoveries of the past, the promising investigations of the present and the ever-increasing importance of laboratory methods in diagnosis. A knowledge of experimental details teaches conservatism; it makes the student hesitate to accept a current hypothesis as a general law of nature; it tends to arouse an appetite for the fundamental in medicine; it stimulates to inquiry and to a logical analysis of phenomena. At Johns Hopkins, the course in Pharmacology is preceded by a study of the intoxications. Accompanying this is a chemical course dealing with the isolation of alkaloids, tests for poisons, blood, etc., There are also numerous recitations and conferences, but little didactic instruction. Pharmacology is taught by experiments and demonstrations, the object being to illustrate the effects of the more important drugs. Such a course is valuable even if the student can perform only six or seven experiments himself. The teacher, while not necessarily an active practitioner, should be familiar with clinical work. Therapeutics, however, is best taught by the various clinicians. A course in Practical Therapeutics is desirable. Detailed instruction in Materia Medica is unnecessary. A brief course in Pharmacy is desirable, but not indispensable.

DR. OLIVER T. OSBORNE (New Haven), in discussion, described the method used at the Yale Medical School. After a brief course in Pharmacy, the students take up Materia Medica in their second year; it is made as practical as possible. Experimental Pharmacology follows, and then, in the junior year, the students take up Pharmacology. The drugs are studied in groups, according to their therapeutic uses. The teacher should be familiar with clinical work. As a rule the men write better prescriptions early in their

course than they do later, because later they come in contact with those who use the old system, which introduces an element of confusion. They memorize an average dose for each remedy rather than the range of dosage. Therapeutics is introduced in the latter part of the junior year; it is taught by lectures, recitations and clinics. In the last, case-history cards are carefully filled out by the students; they serve to aid the memory, and when completed furnish a complete history of each case, with the object of treatment and result plainly stated.

Dr. Torald Sollman (Cleveland): The objects of medical school instruction are best gained by lectures, recitations and practical work. The lectures should not be too full, or the student will depend upon them to the exclusion of outside reading. Lectures, however, are indispensable; the personal influence of the teacher is of great value. The recitations teach men to think. In teaching Pharmacology, laboratory instruction is desirable, but not absolutely indispensable. Generally speaking, it is not advisable for a professor to be also engaged in practice. He agreed with previous speakers as to the best methods of furnishing clinical instruction. Only the essential portions of Materia Medica should receive attention. As a rule, the less Pharmacy taught, the better. The metric system is the system of the future.

FROM PHARMACOLOGICAL SCIENCE TO THERAPEUTIC ART.

Dr. Eli H. Long (Buffalo). Medical school instruction in the first two years is better than in the last two, because the earlier work is more definite in character, more teachers are engaged in it and the student does more for himself; third and fourth year classes are taught together, which minimizes individual instruction and leads to a faulty adaptation of the needs of each class. Pathology and diagnosis are emphasized at the expense of treatment. In the earlier years the student acquires a groundwork of facts; in the final years he should be taught to use them — to associate facts, to recognize principles and to form conclusions. Mind training rather than fact getting should be the main object. In his opinon these objects are best gained by informal conferences between teacher and class. Clinical instruction must also be provided, and the courses in Pathology and Practice should be correlated to that in Therapeutics. The student must be guarded against the prevalent scepticism as to the efficacy of drugs, and the tendency to use commercial preparations. Two features should be given especial prominence: the clinical sessions and an endeavor to train the students to use their own efforts in all that pertains to treatment.

DISCUSSION.

Dr. Howard Vanrensselaer (Albany) described the method used in the Albany Medical College. The first two years are largely didactic; the third is didactic and laboratory; and in the fourth the lectures are eliminated as far as possible. Clinical instruction is given to classes of about eight men each. The physiological effects of drugs are illustrated by actual administration. The case-history card requires too much time, and does not teach the student to think for himself.

WHAT OUGHT WE TO EXPECT FROM CARDIAC DRUGS IN HEART DISEASE?

Dr. Oliver T. Osborne (New Haven). Important causes of early cardiac disease are the "strenuous life" and abuse of alcohol and tobacco. Acute weakness calls for cardiac stimulants — alcohol, ammonia, etc.; chronic weakness calls for cardiac tonics — digitalis and drugs of its class. Digitalis is the queen of heart tonics. After reviewing indications and contraindications for the use of digitalis, Dr. Osborne statet that strophanthus is the best substitute, and it is even preferable in some conditions. Sparteine is not a substitute. Fresh fluid extract of cactus regulates and quiets the heart. It is useful as an adjuvant to digitalis, and is preferred in cardiac debility of convalescence, in old age when digitalis is contraindicated and in functional diseases. Convallaria and adonidin proved unsatisfactory in his hands. Barium chloride is a powerful heart stimulant. Suprarenal extract is a vasomotor and cardiac stimulant only when absorbed from the nose or mouth. Notwithstanding its value we are inclined to give too much strychnia. It should be reserved for emergency. Caffeine is a useful substitute for alcohol in prolonged fevers; it is also an adjuvant and temporary substitute for digitalis. The beneficial effects of alcohol are due to reflex stimulation; it is not a stimulant after absorption; if too much is absorbed it acts as a depressant. Hence it is the poorest stimulant we can use to combat continuous heart failure.

DISCUSSION.

Dr. Eli H. Long (Buffalo). The first effect of digitalis, the direct effect upon the heart, is the most desirable; the slowing comes later, and may or may not be desirable. He liked the terms "kinetic" and "potential" as applied to heart stimulants — digitalis and caffeine are kinetic stimulants; strychnia, which acts by irritation of tissue, is a potential stimulant. Dr. Robert Reyburn (Washington) advocated smaller doses of digitalis, strychnia and alcohol. Strychnia is given for almost everything. He had seen a case in which it caused cerebral hemorrhage by raising arterial pressure. It is often well to combine digitalis and aconite. Dr. T. E. Satterthwaite (New York) ascribed the increasing frequency of diseases of the heart and arteries largely to syphilis, gout, the "strenuous life," abuse of alcohol, tobacco, coal-tar products, etc. The nitrites are often preferable to digitalis. In determining treatment it is necessary to distinguish between functional and organic cardiac affections, and also between cardiac stimulants and tonics. Serious mistakes have resulted from a failure to observe the first precaution. In functional derangements digitalis often does

harm, but the antispasmodics do good. A slow or a fast pulse in heart affections has little significance. In his experience suprarenal extract has acted well as a heart tonic when given by mouth. He usually prohibits tea, coffee and tobacco. Coffee is a poison to about one-third. DR. ARTHUR T. HALL (Washington) commended caffeine as a valuable heart tonic. DR. OSBORNE, in closing, spoke of the connection between the declining function of the thyroid gland, which begins at about the forty-fifth year, and arterio-sclerosis. Thyroid extract, in small doses, tends to minimize the changes resulting from atrophy of the gland.

WHO MAY BE BENEFITED BY ALTITUDE TREATMENT?

DR. J. N. HALL (Denver). Unfortunately, many patients are sent to higher altitudes who cannot possibly be benefited thereby, either through faulty diagnosis or lack of judgment on the part of the physician. If patients with pulmonary tuberculosis are sent away *early*, a recovery may be expected in 90% of cases; after considerable dullness and even excavation has occurred at one apex there is a fighting chance of arrest and a good chance of delayed progress; but involvement of both lungs, unless purely catarrhal, generally precludes hope of complete arrest. Those who are predisposed to tuberculosis may well consider removal to a high, dry region. Other conditions which are benefited are glandular tuberculosis, asthma, chronic bronchitis, malaria and some forms of anemia and hay fever. In the presence of a complication of organic heart disease, one should respect the predominant condition. Little difference is observed if compensation is good; but if it is on the point of failing, it is risky to send the patient to any great elevation.

THE RATIONALE OF THE CURE OF MORBID GROWTHS BY PHOTOTHERAPY AND X-RAYS.

DR. ROBERT REYBURN (Washington), After reviewing our knowledge of the x-rays and Finsen light, Dr. Reyburn expresses the opinion that they destroy the tumors in lupus and epithelioma by an escharotic effect. Continuous application, in addition, forms a zone of lymph around the morbid cells, which protects the body from further invasion. They are superior to other causties because they do not cause such a wasteful destruction of tissue. The opinion is growing that only superficial growths are amenable to their powers.

DISCUSSION.

DR. W. J. MORTON (New York) said that Finsen light had served its purpose and had retired to the background. Superficial growths, like squamous epithelioma, can be cured by phototherapy in 100% of cases; deeper growths are also benefited, but not to the same extent. He had cured twelve cases of early primary cancer of the breast by phototherapy. He did not think that the action is like that of caustics; also, the protection is more through leucocytosis than the formation of a "protective wall." The treatment should be tried before resorting to the knife.

DR J. H. METZEROTT (Washington) commended Dr. Morton's remarks. There is still, however, a field for Finsen light, for example, in lupus. He related instances of successful treatment by phototherapy. He had cured some cases of deeper malignant growths. He believed that the x-rays will have a brilliant future.

THE THERAPEUTICS OF POTASSIUM COPAIVATE.

DR. LOUIS KOLIPINSKI (Washington). Potassium copaivate is the potassium salt of copaivic acid, and is made by the action of potassium hydroxide upon copaiba. It is a clear, reddish-brown fluid, gelatinous at 50° F., oily at 65° and liquid at 70–80°; taste, peppery; odor, like copaiba; dose, 50 to 150 gr. daily, best in capsules. The untoward effects are like those of copaiba, but are much less marked. It is useful in chronic eczema, acne vulgaris and rosacea, etc. Applied to ulcerating cancerous surfaces it removes fetor, arrests purulent discharge and prevents hemorrhage. Two or three drops to the ounce makes an agreeable detergent spray for nose and throat. Internally, its uses resemble those of copaiba. He had used it to advantage in non-obstructive anuria, acute and chronic cystitis and cholelithiasis. Its main use is in acute gonorrhea; if given early, it will in some cases produce a cure in a few days; it lessens the liability to complications, and is superior to copaiba.

CAFFEINE IN THE TREATMENT OF ALCOHOLIC TOXEMIA.

DR. ARTHUR J. HALL (Washington). Caffeine is directly antagonistic to alcohol in effect, and is almost a specific in alcoholic toxemia. After contrasting the action of the two drugs, Dr. Hall states that when given in 1 or 2 gr. doses every two or three hours it will usually within twenty-four to forty-eight hours effectually quench the appetite for liquor so that the *habitué* will voluntarily give up its use. He cites four cases in illustration, and advocates its use in all forms of alcoholic toxemia.

DRUG STANDARDIZATION IS ABSOLUTELY NECESSARY TO ACCURACY IN DRUG THERAPEUTICS.

DR. F. E. STEWART (East Orange, N. J.). Dr. Stewart emphasizes the importance of the subject, and states that the profession is largely responsible for the present deplorable lack of uniformity of drugs in quality and strength. Physicians and pharmacists should co-operate to secure remedial legislation. What is needed is a *profession of pharmaceutical experts* who shall ensure a standard materia medica supply. It must be created by legislation limiting the manufacture and sale of medicinal products to pharmacists, forcing them to carry on their vocation on a professional plane, and protecting them from unfair competition by obliging manufacturers to publish the true composition of their medicinal products and to tell the truth about them in their advertisements.

CONTROL OF THE PURITY AND STANDARD QUALITY OF DRUGS.

Dr. H. W. Wiley (Chief Bureau Chemistry, United States Department Agriculture Washington). After emphasizing the importance of drug control Dr. Wiley told of the investigation now being pursued by the Department of Agriculture. The object is to ascertain by analyzing thousands of samples purchased in the open market, the extent to which adulteration and fraud are carried in the drug trade, and then by bringing the facts before Congress to secure legislation which will protect pharmacists and the public against fraud, and guarantee to the physician drugs pure and of standard quality. This method was used successfully in securing the Pure Food Law, which went into effect July 1.

Dr. Satterthwaite spoke of the importance of the subject. He was glad that the work had been taken up by the government, and hoped that it would be carried to a successful termination. Publicity as to the quality and composition of medicinal products is the great thing necessary. He commended the investigation under the direction of Dr. Wiley.

SYMPOSIUM: RECENT ADVANCES IN SPECIAL THERAPEUTICS. SURGERY.

Dr. Carl Beck (New York). Schnitzler's statement that leucocytosis is present in cases of purulent appendicitis has been corroborated by many observers. Kyroscopy gives valuable information in the diagnosis and prognosis of renal affections calling for nephrectomy. X-rays have simplified the diagnosis of many disorders. Phototherapy has given good results in the treatment of external malignant growths. Senn also reports curative effects in two cases of Hodgkins' disease. The treatment will not, however, replace surgery; it should be reserved for inoperable cases. Edebohl's statement that stripping the kidney capsule will cure some renal disorders requires further confirmation. Kehr's work in the surgery of the biliary passages marks a new epoch. Czerny shows that renal tuberculosis is generally unilateral. Kronlein concluded from 264 cases of gastric carcinoma that unoperated patients will live one year; gastro-enterostomy prolongs life three and a half months; extirpation of the growth also adds fourteen months more.

LARYNGOLOGY.

Dr. Charles H. Knight (New York). Paraffin prosthesis for nasal deformities has become an established method. The paraffin is best introduced in a semi-solid state. It ultimately becomes organized, and ceases to be a foreign body. Some untoward effects have been noted. Some even claim for it curative effects in atrophic rhinitis. Suppurative affections of the accessory sinuses are receiving more attention, particularly the sphenoidal sinus. Grunwald claims that intranasal atrophy is due to suppurative disease of the sinuses; Minder claims the reverse. Conservative treatment, free drainage and irrigation give good results in most cases. The value of the new silver preparations is still *sub judice*.

ROENTGEN RAYS IN SKIN DISEASES.

Dr. E. B. Bronson (New York). Dr. Bronson discusses the nature of the rays, and contrasts the beneficial effects with those resulting from reckless usage. The agency requires careful management, and is potent for good or evil according to how it is used. The principal factors in the production of reactions are, the susceptibility of the individual, the condition of the tube, the distance from the focus and the duration of exposure. After considering each of these in detail, he states that the effect of successive irradiations is in a sense cumulative; if the first is sufficient to produce a therapeutic effect, additional irradiations may produce a burn. Hence some begin with a weak dose and increase; others, however, like Schaltz, begin with the maximum, having first tested the susceptibility of the patient. The method, viewed as a therapeutic measure, is still in the experimental stage.

GYNECOLOGY.

Dr. H. J. Garrigues (New York). Subcutaneous injections of gelatin to control hemorrhage are falling into disuse; suprarenal extract is preferable. Wernitz combats sepsis with rectal enemata of normal salt solution, continued an hour each time until temperature falls and diuresis is established. Two new mercury antiseptics have been introduced, the citrate and sulphate; they are bland, and equal the bichloride in antiseptic power. The Alexander operation for correction of retroflexion is gaining ground. Kreutzmann rejects ventro-fixation and ventro-suspension; in several instances it has necessitated subsequent Cæsarean section. He recommends low vaginal fixation, or shortening of the round ligaments. Garrigues does not favor the former. Oldebrecht has adopted Menge's method of treating chronic endometritis, the application of a fifty per cent formalin solution for one or two minutes, repeated in a week if necessary. The tendency to use the vaginal route in every possible case is abating. Downes of Philadelphia has perfected Skene's method of extirpating cancer of the uterus with electro-cautery clamps.

MATERIA MEDICA.

Dr. A. A. Stevens (Philadelphia). Protective vaccination with sterile cultures of typhoid bacillus has been used with some success in the British Army. Statistics do not credit antistreptococcus serum with any decided reduction of mortality. Leyden reports fourteen cases of scarlet fever treated with serum from convalescents with favorable results. After discussing lumbar puncture and phototherapy, Dr. Stevens refers to the use of benzoyl-acetyl-peroxide in typhoid fever; it has been recommended by several writers, but it seems doubtful whether any intestinal antiseptic has power to stay the course of the disease.

Adrenalin chloride has gained a reputation as a vaso-constrictor. Untoward effects have been noted in animals; among them, glycosuria and degeneration of the islands of Langerhans of the pancreas, after intraperitoneal injection of a 1 to 1,000 solution in dogs. This suggests that diabetes may be due to disease of the suprarenals. Kelynack demonstrates that alcohol predisposes an individual to tuberculosis. Gelatin maintains its value as a hemostatic. Methylene blue, while not as potent an antimalarial as quinine, deserves trial when quinine cannot be given. Thiosinamin is recommended for softening keloid growths, cicatricial tissue, etc.

OPHTHALMOLOGY AND OTOLOGY.

DR. J. E. WEEKS (New York). Acoin has been recommended in 1 to 3% solution as a local anesthetic for the eye; Randolph claims that it does not affect pupil, accommodation or intraocular tension. It is inferior to cocaine, but is useful in some conditions. Ethylmorphine hydrochlorate in 5% solution produces anesthesia which may last 36 hours; it is useful in inflammatory diseases of the eye. Benzoylmorphine hydrochlorate, an anesthetic and mydriatic, is recommended in 1% solution as an adjuvant to cocaine, atropine, etc. Holocain, in 1% solution, is antiseptic and anesthetic, and is more energetic than cocaine. Haab of Zurich uses small iodoform rolls or plates in the anterior chamber in beginning panophthalmitis, post-operative infection, etc. The drug is gradually absorbed. In twenty-three cases he obtained good results in ten, fairly good in five and failure in eight. Injections of bichloride of mercury deep into the orbital tissues for cellulitis have given good results. Loss of sight from diphtheria is now entirely avoidable; before the introduction of antitoxin it occurred in 95% of cases.

ORTHOPEDIC SURGERY.

DR. H. L. TAYLOR (New York). The writer commends Dr. Lorenz' work, and states that within the age limit the bloodless method is the method of choice. The present tendency is toward radical interference by simple methods. Forcible correction of the kyphotic spine has largely been abandoned, corrective postures without anesthesia taking its place. Early incision for joint disease in children has been abandoned, and excision of the knee absolutely rejected except to save life. X-rays have proved an invaluable aid to diagnosis. The brilliant work of Goldthwait upon joint affections of adult cripples deserves especial mention. It has been demonstrated that Paget's disease of the bones is a fairly common cause of pain and disability in adult life. Locke of Boston reports twenty-one cases; only eleven had previously been reported in this country. Transference of function by tendon grafting has proved disappointing. Function transference through nerve suture is in its infancy and of uncertain value.

GENITO-URINARY DISEASES.

DR. JAMES PEDERSEN (New York). Advances have been made in the surgery of the kidneys, ureters and prostate, in the medical aspects of gonorrhea, asepsis of the genito-urinary tract and in the determination of the functional integrity of the kidneys. Young shows that calculi can be removed from the ureters and strictures divided in the intrapelvic portion extraperitoneally, by an iliac incision beginning above Poupart's ligament and running upward and outward one inch anterior to the anterior-superior spine; on stripping up the peritoneum, the ureter is usually found adherent to it. Castration, vasectomy, and ligation of the vas have been discarded. After describing the latest methods of performing prostatectomy, Dr. Pedersen mentions a unique operation performed by a French surgeon, "prostatomonose," or isolation of the gland. The prostate is reached by a prerectal incision and freed from surrounding tissues; this is supposed to cause atrophy. The paper concludes with a reference to newer remedies and the method of determining the functional activity of the kidneys by the freezing point of the blood.

OBSTETRICS.

DR. CHARLES M. GREEN (Boston). The paper first deals with the treatment of puerperal infection; interest in antistreptococcic serum has waned, but hope is not yet dead. The intravenous injection of formalin has proved a failure. Prophylaxis is, after all, the best therapeusis. After discussing this subject, the writer advocates the scopolamine-morphine method of producing narcosis in labor in suitable cases. Von Steinbuchel concluded that this is an ideal method. Dr. Green relates nineteen cases, sixteen primiparæ and three multiparæ, in which he used the remedy with marked success. Scopolamine hydrobromate and morphine nitrate were so combined that a dose of ten minims contained $\frac{1}{100}$ gr. of the former and $\frac{1}{4}$ gr. of the latter. The beneficial effects were very marked. The treatment is of especial value in primiparæ of nervous and hyperesthetic organism. The remedy should be given hypodermically as soon as nervous symptoms appear. In heroic doses it is also a potent remedy for controlling the convulsions and nervous manifestations of eclampsia. The paper concludes with a report of three cases in which it gave perfect satisfaction.

PEDIATRICS.

DR. N. P. BARNES (Washington). Dr. Barnes commends dessicated thyroid in mammary inactivity, and reports four cases in which it acted beneficially. Neisser reports eight cases in which nursing children failed to contract diphtheria from diphtheritic mothers; possibly the milk acts as an antitoxin to the child. After discussing infant feeding the writer quotes the conclusions of the United States Bureau of Animal Industry as to the infectious quality of milk from tuberculous cows. Convulsions of childhood are always, according to his experience, associated with intestinal indigestion. They demand immediate relief. Reports differ as to the value of anti-scarlet-fever serum. Aronson's appears to have given the best results. It has been shown that measles

and pertussis are amenable to serum obtained from convalescents; Silvester reports good results in seven cases of whooping cough. Eberson claims that potassium guaiacol sulphonate has a specific effect in pneumonia, causing crisis in twenty-four to seventy hours. Lumbar puncture has become a valuable diagnostic and therapeutic measure in certain cases.

The following officers were elected for the ensuing year:

President, Dr. H. H. Barker, Washington; First Vice-President, Dr. J. N. Hall, Denver; Second Vice-President, Dr. Oliver T. Osborne, New Haven; Third Vice-President, Dr. Carl Beck, New York; Secretary, Dr. N. P. Barnes, Washington; Recorder, Dr. W. M. Sprigg, Washington; Treasurer, Dr. J. S. McLain, Washington.

Recent Literature.

Tuberculosis. By Norman Bridge, A.M., M.D. Philadelphia, New York and London: W. B. Saunders & Co. 1903.

Under the above comprehensive and terse title the author has written a small and compact volume meant for the use of the profession at large, although the chapters are practically didactic lectures intended for students.

The first few chapters are devoted to the discussion of the etiology and pathology of the disease, and, while containing nothing especially new, present the subject in a condensed form suitable for the general reader. In the chapter upon methods of examination, the author evidently believes that in percussion the fingers are the best instruments, although other devices may be of use at times. He has little regard for so-called "auscultatory percussion." He believes that the monaural wood stethoscope is the best one for faithfulness of transmission and accuracy of tone, and yet feels that it is one not so easily or correctly used by the majority of medical men as the double stethoscope originally devised by Camman, or some modification of the instrument.

The author rightly shows skepticism as to the confessed ability of many to discover the existence of cavities in the lung, believing that misstatements are often made upon this point.

He believes in the diagnostic value of tuberculin, and shares the common belief that no possible harm can come from such use of the substance. Later he discusses the therapeutic use of tuberculin, and somewhat at length quotes the experience of others upon whose judgment we have learned to rely, notably Trudeau, in support of the theory that the substance produces an apparent immunity in a small percentage of cases, and yet he would seem to be uncertain in his conclusions as far as permanent benefit to the patient is concerned.

The author's somewhat extreme views upon the great value of absolute rest for a diseased lung and his well-known attitude upon the subject naturally bring much criticism from those who believe that he goes too far in claiming that every diseased lung should be kept quiet and that the more common practice of moderate expansion of the lungs in incipient cases should be avoided. The writer of this review, while believing that judgment must be used in every case, differs in opinion almost entirely from what he considers the author's unwarranted claims. Naturally Dr. Bridge's belief leads him to support the theory of the Murphy treatment, which immobilizes the lung by injections of nitrogen into the pleural cavity, a method which the writer believes will fall into disuse, as have many other highly-vaunted methods of cure in the past.

The chapters upon the climatic and sanatorium treatment are all characterized by good sense and judgment, based, evidently, upon the author's well-known, long practical experience in the treatment of the disease in widely different sections of the country,— Chicago and Los Angeles and their vicinity. One could wish, however, in his discussion of sanatorium treatment, that he had emphasized the vital importance of keeping all such institutions absolutely to the purpose for which they were intended and of not attempting to make them hotels and sanatoria at the same time, a method which can only prove disastrous to the cause of the sanatorium treatment of tuberculosis, which has justly received such marked attention in recent years.

The book is embellished with several excellent illustrations, is of clear plain type and is worthy of a permanent place in every medical library.

A Manual of Refraction and Motility. For Students and Practitioners of Medicine. By William Norwood Suter, M.D., Assistant Surgeon to the Episcopal Eye, Ear, and Throat Hospital, Washington, D. C. 12mo. 382 pp., with 101 engravings and 4 colored plates. Philadelphia and New York: Lea Brothers & Co.

It has been the endeavor of the author to place in the hands of the advanced student and practitioner a manual on refraction and motility of the eye which shall contain the essentials of the more elaborate treatises without at the same time being too elementary in character. In this respect certainly Dr. Suter has succeeded very well, as the volume is of a convenient size and contains only about three hundred and eighty pages of text, which is divided into the following four parts: The theory of refraction and incidentally the optical principles upon which rest the various examination methods; the normal eye; errors of refraction; disorders of motility. Only such formulæ have been included as seem necessary for a proper comprehension of the theory of refraction, but still if the reader is not inclined to follow carefully the various demonstrations the rest of the book may be as intelligently read by simply attending to conclusions. The presswork is of excellent quality, and the illustrations are many and apt.

THE BOSTON

Medical and Surgical Journal

THURSDAY, SEPTEMBER 24, 1903.

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THE OPENING OF THE SCHOOLS.

IT is the laudable custom of our contemporaries, the *British Medical Journal* and the *London Lancet*, to devote practically an entire issue in the fall to the general question of medical education. This year the numbers of these two journals for Sept. 5 are given up to what the *British Medical Journal* calls an educational number and what the *Lancet* calls a students' number.

The *British Medical Journal* discusses at the outset the advantages and disadvantages of the profession of medicine. It can hardly be said that this contribution savors of originality, but nevertheless it contains many facts which the young man about entering upon his professional work will do well to ponder. The profession is discussed from the physical, financial, intellectual, ethical and social standpoints, with the general conclusion that it "affords a fairly certain means of livelihood with unrivaled opportunities for that development of the faculties which, as Goethe said, is a duty of the highest importance for every man; moreover, it opens a field for the exercise of his faculties in which he will have the sense of doing good with more certain purpose than in any other." This incentive should certainly prove sufficient to lead many a wavering youth into the ranks of medicine. The "portals" and "prospects" of the profession are likewise discussed in a separate article, and herein are noted many facts concerning choice of a medical school, cost of a medical education, waiting time, with its dangers, all of which again are to be commended to the young student. The medical curriculum also demands attention, and the remainder of the number is taken up with details which concern British medicine more particularly than medicine at large.

The *Lancet* does a similar service for prospective students. The leading article is entitled "An Address to Students," in which again advice of the most fatherly sort is given to the young matriculant. Surely the youth of Great Britain should appreciate the solicitude which these leading medical periodicals devote to their future. This number of the *Lancet* contains in addition a vast amount of information concerning universities in the United Kingdom, and we can easily see that this information may be of the greatest advantage to postgraduate as well as undergraduate students in determining their selection of hospitals and schools for later study.

Conditions of medical instruction in this country are such that at present there is no demand for such an exhaustive yearly consideration of various schools and their particular claims to recognition. The time is, however, no doubt coming when just such a statement of facts connected with medical education will be of the greatest possible advantage to intending students. As our medical schools attain to a higher degree of uniformity of requirement, and our state registration laws become more complex, it will be altogether desirable that students and physicians alike should be kept informed of the details which are sure to develop. When such a time comes, we may well take as a model these remarkable yearly issues of the *Lancet* and the *British Medical Journal*.

THE CONSUMPTION OF HORSE MEAT AS FOOD.

THE high price of meat as compared with other articles of food, the frequency of different diseases among animals whose meat and milk are used as food, raises the question whether the meat of some other animal may not be employed advantageously for food purposes.

When we consider the fact that hogs, and especially those which are kept in the neighborhood of large cities, are fed upon the most putrid of all substances, city offal, it is not a matter of surprise that the pork of such animals should often cause serious illness. Nor is it to be wondered at that the meat and especially the milk of cows is not regarded as a perfectly wholesome food, when such animals are often fed upon exhausted and fermented food, such as distilling refuse, brewer's grains, gluten meals, cotton seed meal and ensilage, in some of which the most nutritious

portions have been extracted and in others fermentation has taken place, the object being to increase the flow of milk, but not to improve its quality, or that of the animal.

In times of emergency, conditions of siege in war and of great scarcity of meat, the meat of the horse has been introduced and used without injury to health. Many horses are killed on account of some accident when in perfect health, or on account of lameness, which may not affect their general health. The possible use of diseased horses could easily be prevented by a system of inspection such as is employed for other slaughtered animals at the abbatoir. The food of the horse is much cleaner than that of most animals used as food, consisting as it does chiefly of hay and grain, and the horse is scarcely ever attacked with tuberculosis.

In a recent Italian health report,[1] the author, Dr. Frassi, presents some interesting facts relating to the consumption of horse meat in the city of Parma, as well as in the country of Italy at large. He does not agree with the common opinion that the sale of horse meat injures the sale of other meat on account of its lower price, but believes that the food supply of the working classes has improved in proportion to the introduction of horse meat as an article of food. The number of horses slaughtered varies much at different seasons, the greatest number being killed in November and December, the difference being accounted for by the higher cost of feeding in winter and the decrease in the demand for horses.

There were fifteen shops in Parma in 1901 where horse meat was sold, most of which were open only from October to April, only one or two remaining open later in the season. In this category nearly one-half of the animals included were asses and one-tenth mules. The customers are mostly of the working classes. About 20% of the meat is used in hotels, and some goes to restaurants. A considerable quantity is employed in making sausages. The author considers the use of this meat as a matter of decided hygienic importance, in consequence of the almost absolute immunity of the horse to one of the most common of all diseases to which other food animals are subject, — tuberculosis.

OPPOSITION TO MANILA BOARD OF HEALTH.

The Board of Health usually experiences little opposition in carrying out measures among the poorer class of Filipinos and Chinese in Manila, but the Spanish element and more wealthy Filipinos have bitterly opposed the Board of Health, particularly with respect to sanitary improvements relating to the disposal of excreta and the installation of waterclosets in lieu of the filthy sinks and vaults which were the rule under Spanish administration. The latter class is largely the landlords in Manila, who resent any effort to make them spend money in improving the sanitary condition of houses for which they exact a relatively enormous rent. As a result of their neglect to obey sanitary regulations, a number of prominent Filipinos and Spaniards have lately been sent before the courts and fined. One wealthy banker who had been fined ten dollars appealed his case to a higher court, where the decision of the lower court was not only confirmed, but the sentence increased to one hundred dollars fine, with thirty days in jail in addition; but sentence was suspended for fifteen days on condition that the banker place his premises in good sanitary condition. As this case had been largely regarded as a test case, a reversal of the verdict of the lower court would have seriously impaired the efficiency of the Board of Health. As it is, the opposition has been effectually disposed of, and the eagerness manifested on all sides to comply with any sanitary requirements imposed by the Board of Health is somewhat amusing. A strong point of the American government is its absolutely unbiased and incorruptible judiciary, which is not understood by the wealthy native element, accustomed in the old Spanish days to buy any kind of "justice" it was willing to pay for. The American judges have uniformly supported the sanitary authorities in carrying on their work, and have thus rendered it possible to obtain good results in Manila and the larger cities. The native judges in the smaller towns take an entirely opposite stand and render the enforcement of sanitary regulations practically impossible where such cases are brought before them for decision. It is most fortunate that the right of trial by jury cannot yet be demanded in the islands, as under such conditions it would be practically impossible to convict a Filipino on any charge preferred by a white man, and laws governing sanitary matters would be a dead letter all over the Philippines, as they now are in the provinces and country districts. Manila is the Paris of the Philippines, however, and with it in good sanitary condition there is an ever-present object lesson which cannot fail to ultimately impress

[1] Dr. Frassi: Atti del Ufficio d'igiene della Città di Parma, 1902.

itself upon the other people of the islands and tend to raise their sanitary standards.

MORTALITY STATISTICS.

A PAMPHLET has recently appeared from the United States Census Office on the question of the "Relation of Physicians to Mortality Statistics," being the international classification of causes of death adopted by the United States Census Office and approved by the American Public Health Association. This circular is published for the benefit of physicians who are obliged to make out death certificates in compliance with registration laws.

As stated in the introduction, it is clear that statistics, to be comparable, must be uniform and also accurate. A proper classification demands that the cause of death be accurately stated, and, inasmuch as the chief value of these statistics is in the distribution of death by causes, it is clear that physicians must supply the necessary information with certainty and after a more or less definite plan. An error into which physicians fall is to define the cause of death by some indefinite term which frequently is a cloak for their ignorance of the exact cause. This naturally is in a measure excusable, but it is none the less desirable that a general and comprehensive plan be in use so far as possible to avoid the uncertainties which are sure to arise.

The circular before us is designed to furnish just this information. It will be sent to every physician in the country, and it is suggested that they will manifest their appreciation by conforming as far as possible to the suggestions made. The classification offered is essentially a selection and arrangement of titles merely, under which deaths variously reported must be compiled. The classification itself is arranged with such explanations that it is easy of understanding, and should prove of the greatest use in stimulating accuracy in this matter in which physicians are notoriously lax. Inasmuch as the pamphlet is to be generally distributed throughout the profession, it is not necessary that we should call attention to details of its arrangement beyond saying that for purposes other than death certifications it should prove valuable reading.

MEDICAL NOTES.

APPOINTMENTS TO HENRY PHIPPS INSTITUTE FOR STUDY OF TUBERCULOSIS. — The following additions to the staff of the Henry Phipps Institute have been made: Dr. M. P. Ravenel has been appointed Assistant Medical Director and Chief of the Laboratory; Dr. E. A. Shumway has been appointed Ophthalmologist; and Dr. J. F. Wallis has been appointed Dermatologist.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Sept. 23, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 30, scarlatina 9, typhoid fever 41, measles 15, smallpox 0.

A CENTENARIAN. — Mrs. Ruth Curtis has recently died in Kennebunkport, Me., at the reputed age of one hundred and four years. She had spent her entire life in Kennebunkport, and presumably at the time of her death was the oldest person in Maine.

BEQUESTS TO HOSPITALS. — By the will of the late Francis J. Lawrence of Waltham the Waltham Hospital receives $5,000, the Leland Home for Aged Women $1,000, the Massachusetts General Hospital $1,000 and what remains, after various other bequests are made, goes to the Waltham Hospital.

AN ITEM IN THE LONG ISLAND HOSPITAL INVESTIGATION. — It is reported in the daily press that the bill for stenography presented to the city in the recent investigation of the Long Island Almshouse and Hospital amounts to nearly $8,000. In view of the result of the investigation, this will be regarded in the popular mind as a wholly useless expenditure of city money.

WALTHAM, MASS., TRAINING SCHOOL FOR NURSES. — With the graduation of the present class at the training school of the Waltham Hospital, certain changes will be made in the course. Up to this time two classes have been graduated annually, spring and fall. Hereafter but one class will be graduated, in the spring. A four years' course will be substituted for the former course of three years and six months, but a certain reduction in the age of those entering the school will be made to meet this extra requirement. This training school, although connected with a relatively small hospital, has established for itself a most enviable reputation for thoroughness and efficiency.

NEW YORK.

DEATH FROM ETHER. — A death under ether is reported to have occurred at the New York Eye and Ear Infirmary on Sept. 14. The patient

was a girl thirteen years of age, and the fatal accident occurred in the middle of a trephining operation for the relief of mastoiditis.

Bequests to Hospitals. — By the will of Dr. Joseph Schnetter, formerly of New York, who died recently in Germany, $50,000 is left in trust to be invested in State or United States Government bonds, the interest of which is to be paid regularly to a certain legatee. On the death of this individual $35,000 of the amount is left to the German Hospital and Dispensary, New York, and the remaining $15,000 to the Mount Sinai Hospital, New York; the money in each instance to be used to endow free beds for women. The residue of the estate, which is said to amount in all to about $140,000, is left to the widow, with the request that at her death she bequeath it to the German Hospital.

Straus Milk Depots. — The various Straus depots for the dispensing of pasteurized and sterilized milk were recently closed for the season. During the summer 1,593,726 bottles of milk and milk foods were dispensed, besides 600,000 glasses of milk in the public parks. This has no doubt been an important factor among the various agencies which have contributed to the reduction of mortality among infants and young children, which in the summer of 1892, the year before the charity was inaugurated, reached the rate of 136.1. In 1893 the rate was 117.9, and since then, with the exception of the year 1895, when there was a retrogression of about 4%, it has steadily declined, until during the summer of 1903 the rate was only 63.6. The past summer has, of course, been an unusually cool one, but this was the case last year also, when the rate was 71.1.

Dr. Thomas Addis Emmet, Author. — In recognition of the centenary of the death of Robert Emmet, which occurred Sept. 20, 1803, the Putnams have just published an elaborate work on "Ireland under English Rule," from the pen of Dr. Thomas Addis Emmet, the distinguished gynecologist, who is a grandnephew of the Irish patriot.

A Venerable Life Insurance Policy. — On Sept. 13, 1803, Charles Henry Booth of Engelwood, N. J., who enjoys the distinction, so far as can be ascertained, of being the oldest person in the world holding a life insurance policy, celebrated his one-hundredth birthday. In 1843 he insured in the Mutual Life Company, then in the first week of its existence, and the policy has been kept up ever since. In honor of the event the company has had prepared for Mr. Booth a testimonial handsomely engrossed on parchment, and inscribed "The Oldest American Company to Its Oldest Policyholder."

Notes from the Philippines.

X-Ray and Finsen Light. — An x-ray machine and a Finsen-ray apparatus have been received by the Board of Health, and will be installed at the San Lazaro Hospital, where they will be given a thorough test on the more than two hundred lepers now isolated there, with respect to the cure of this disease through their agency.

Cholera. — The report of the Board of Health for the month of May, just issued, shows a mortality for the month at the rate of 30.02 per annum. This was a considerable increase over the rate for April, 22.12, but was much less than that for May, 1902, which was 65.81. The increase for the present month was due almost wholly to a sudden rise of cholera cases, there being 230 during the month, of which number 92.17% ultimately died. This rise was not unanticipated, as the general history of cholera in the tropics shows a sharp increase coincident with the beginning of the rains, when infectious material, rendered temporarily harmless through local conditions, is washed into the water-courses and perhaps widely spread through a source of water supply. The May outbreak occurred under such conditions. It was noteworthy that the greater part of those who contracted cholera were boatmen, laundresses, fishermen and others whose occupations brought them into close contact with the Pasig River and certain esteros. Most of the cases occurred in districts along the water front, and of these cases a large part occurred on boats moored in certain backwater reaches. Careful examination of the waters of the Pasig River and the larger esteros was therefore made, and the presence of cholera germs in large numbers determined, particularly in the slack water anchorages, where the greatest number of cases had occurred on boats. This latter fact was attributed to the throwing overboard of the discharges from cholera cases, and in some instances the disposal of the dead in this way. The water so contaminated was backed by the rising tide into the esteros, and the infection was thus conveyed to other quarters of the city. It was quite impossible to entirely prevent the boat population from using the river

water for domestic purposes. In some instances attributed by the natives to the use of infected foods purchased in the Tondo market, investigation usually determined the fact that such food had subsequently been washed in river water and had probably become infected after purchase. The Board of Health met the situation by increased vigilance in respect to sanitary inspections, more stringent oversight of the markets and by the issue of 35,000 circulars giving a few simple rules for the prevention of cholera, one of these circulars being posted in every house and on every water craft in the city. There was an immediate decrease in the number of cases of cholera, and by the end of the first week in June the outbreak was entirely under control and the cases few and scattering. During the outbreak of the month more than twice as many males as females died of cholera, and of the 194 deaths reported as occurring during the month but twelve occurred in children under the age of fifteen years.

DECREASE IN PLAGUE. — During a recent month there were 27 cases of plague as compared with 52 the previous month. This decrease was apparently in direct response to the special efforts made for its control, including the destruction of plague houses, rat-catching and, of most importance, the general inoculation of the Chinese population, inaugurated during the month. A total of 10,051 rats were destroyed by rat-catchers, and of those examined none were found to be affected with plague. It cannot be fairly expected, however, that the proportion of plague in captured rats will be the same as for the general rat population, as the diseased rats soon die and their physical condition is such that they are not liable to be tempted to destruction by baited traps or poison.

Miscellany.

LECTURES ON TUBERCULOSIS.

THE Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis has arranged for the coming fall and winter a series of lectures by well-known physicians on the various phases of tuberculosis. Some of these lectures will be more or less popular in character, and all will be free to the public. The auditorium of the Witherspoon Hall, at Juniper and Walnut streets, Philadelphia, has been selected for the purpose, having a seating capacity of nearly twelve hundred people.

The first of these lectures will be given by Dr. E. L. Trudeau of Saranac Lake, N. Y., during the last week in October, his subject being, "The History of the Development of the Tuberculosis Work at Saranac Lake."

The following gentlemen have been invited to give the subsequent lectures: Dr. Pannwitz of Germany, in November; Dr. William Osler of Baltimore, in December; Dr. Calmette, Director of the Pasteur Institute at Lille, France, in January; Dr. Herman M. Briggs of New York, in February; and Dr. Maragliano, of Italy, in March. All of them have accepted with the exception of Dr. Calmette, who will come if it is possible for him to leave his work in connection with his institute and the International Congress on Tuberculosis, to be held in Paris in 1904. Subjects and exact dates will be announced as soon as possible.

The director and members of the staff of the Henry Phipps Institute extend a most cordial invitation to the profession in general to attend these lectures. It is greatly desired that this inaugural series of lectures given by these gentlemen will prove a success and be largely attended.

VIVISECTION IN ENGLAND.[1]

UNDER the provisions of an Act of 1876 (39 and 40 Victoria, 77) licenses are granted for the performance of experiments on living animals. A report for the year 1902 presents a summary of the names of all persons who held licenses or special certificates under this Act, together with a statement of the registered places at which the licenses were valid, and of the persons who applied for licenses and granted certificates. It also states the total number of experiments performed in 1902, classified according to their nature.

The total number of persons licensed was 319, of whom 112 performed no experiments.

The tabular statements show: (1) That licenses and certificates have been granted and allowed only upon the recommendation of persons of high scientific standing.

(2) That the licensees are persons who, by their training and education, are fitted to undertake experimental work and to profit by it.

(3) That all experimental work has been conducted in suitable places.

Another table shows the number and nature of the experiments performed by each licensee, specifying whether these experiments were done under the license alone or under a special certificate. In another table the experiments performed without anesthetics are separated from those in which anesthetics were used.

The total number of experiments reported under the Act was 14,906, or 3,261 more than those which were reported in 1901. The number involving serious operations were 2,130 the larger part of which were unattended with pain

[1] Return showing the number of experiments performed on living animals during the year 1902, under licenses granted, distinguishing painless from painful experiments. Ordered by the House of Commons to be printed, June 8, 1903, London.

because they were performed with anesthetics, the animal experimented upon being kept under their influence during the whole experiment. In these cases, if the pain is likely to continue after the effect of the anesthetic has ceased, or if serious injury has been inflicted on the animal, it must be killed before it recovers from the effect of the anesthetic.

The experiments without anesthetics were 12,776, mostly inoculations, with a few feeding experiments and others involving the abstraction of minute quantities of blood for examination. Among this number there were 3,857 inoculation experiments for the testing of antitoxins and 3,997 others performed by official bodies, including the Local Government Board, the House of Commons Ventilation Committee, the Loyal Commission on Tuberculosis, the Board of Agriculture and several minor local authorities. A large number of experiments were performed for the purpose of testing milk for tuberculosis, others for ascertaining whether hair is infected with anthrax and for the examination of sewage. Numerous inoculations were made for the diagnosis of disease in animals, and many were performed in the course of cancer investigations.

The number of injections made during the year for the diagnosis of rabies in dogs was 153.

Correspondence.

LUSCHKA'S TONSIL—THE SITE OF INFECTION IN ARTICULAR RHEUMATISM.

Boston, Sept. 18, 1903.

Mr. Editor: My acceptance of the doctrine of infection as a cause of rheumatism has enabled me to discover, clinically, the usual channel by which the micro-organisms or their toxins enter the economy to produce this disease. An undoubted connection between attacks of rheumatic arthritis and sore-throat (tonsilitis), together with many published observations regarding the microbic origin of rheumatism (v. *Edin. Med. Journal*, August, 1902), gives the necessary suggestion of this true source of infection. Because of long experience with diphtheritic and other similar infections of the faucial tonsils, which promptly ceased after direct sterilization of the post-nasal tonsil *through the nose*, I was made cognizant of this important fact. After selecting severe cases of acute articular rheumatism I treated thoroughly this (Luschka's) tonsil with local applications of hydrogen peroxide and astringents, and obtained immediate results in entire relief of the constitutional and local symptoms, with rapid convalescence in a few days.

It is unusual for either physician or patient to trace any connection between early local symtomatic manifestations and other apparently more important ones in distant parts of the body, because of the accompanying pain (in the joints), and for which ordinary remedies for rheumatism (alkalis and salicylates) are prescribed.

Rheumatic throats have been recognized for years, but the original and probably the only site of infection, namely, Luschka's tonsil, has not been pointed out (unless Woakes of London did this incidentally in his admirable description of the process of "catching cold"). The cause was undiscovered, the remedy was wanting.

The duty of bacteriologists is to decide upon the character and life history of these "cocci" and "toxins" of rheumatism, while it is the privilege and duty of the physician to record the location of the original site of entrance of this disease as well as to distinguish between cause and effect in the measures adopted in treatment of it.

One would imagine that the mere suggestion of a local cause for a systemic affection so serious, with its possible cardiac complications, as acute rheumatism would suffice to arouse every physician to investigate the matter. One might then weigh his knowledge against the empiricism of ages, which has piled up an array of drugs greater in the aggregate than the impedimenta of a Roman army! Their daily use likewise provides similar impediments to progress.

Truly yours,

Edmund D. Spear, M.D.

AN INCORRECT ANNOUNCEMENT.

Pathological Laboratory,
McGill University, Montreal, Sept. 18, 1903.

Mr. Editor: Upon my return from abroad a few days ago, I learned for the first time that I had been announced as one of the honorary presidents of the American Congress of Tuberculosis. This announcement had been made without my knowledge and had been communicated to the public press before ever I had been approached in the matter. After that communication (June 11) I find that I was addressed upon the subject (June 12). The notice which I have before me is in the form of a copygraph letter upon the flimsiest of yellow paper, dirty and badly folded, and is not to the effect that I had been appointed honorary president, but merely a curt reference to an enclosed list of officers elected at a recent session, ending with the expression of the hope that I would accept. The enclosure consists of two columns cut out of the New York *Daily Tribune*, which, it is true, contains my name (misspelled) on the list of honorary presidents. I am not in the least surprised that my first assistant when opening my correspondence in my absence mistook the communication for a second-class advertisement, or something of the kind, and never realized that this was matter which should be forwarded to me.

Under no circumstances would I have consented to allow my name to be connected with the organization in question. The employment of that name as that of an honorary president is, and has been, wholly unauthorized, and I have written asking that it be withdrawn.

Yours faithfully,

J. George Adami, M.D.

Obituary.

NORTON FOLSOM, M.D.

Norton Folsom, M.D., was born in Boston, April 15, 1842, and died in Cambridge, Sept. 12, 1903. He was educated in the Cambridge schools, to which city his parents removed soon after his birth. In 1859 he entered the Harvard Medical School. He was appointed medical cadet in the United States Army Sept. 24, 1861, and served until Sept. 25, 1862. He returned to the medical school, and took his degree in 1864. April 10, 1864, he was appointed surgeon of the Forty-fifth Regiment of colored troops. He was soon appointed on the staff of General Weitzel, where he served as acting medical inspector and director. April 10, 1865, he was made Brevet Lieutenant-Colonel of United States Volunteers. He was mustered out of service Nov. 4, 1865. He was soon after appointed assistant physician to the state hospital for the insane at Taunton, where he remained for several years. He then began practice in New York City, but soon accepted the appointment of resident physician at the Massachusetts General Hospital. He held this position from 1872 to 1877, leaving it on account of failing health. He resumed practice in Boston and Cambridge, paying special attention to mental diseases. He never regained his health, and for several years has been unable to practice his profession. He discharged the duties of all the positions he held with distinguished ability.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 12, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,177	458	32.88	10.28	2.38	15.72	2.04
Chicago . . .	1,885,000	504	183	26.78	7.34	1.98	8.33	4.16
Philadelphia	1,378,527	370	117	27.56	5.13	1.35	6.21	2.43
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	175	49	28.57	6.86	.57	8.57	3.42
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	—	—	—	—	—	—	—
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	69	25	24.63	8.69	—	11.59	2.89
Boston . . .	603,163	197	71	31.98	6.09	2.03	14.21	2.03
Worcester . .	132,044	38	26	34.20	5.26	—	28.94	—
Fall River . .	115,549	50	21	36.00	2.00	—	26.00	4.00
Lowell . . .	101,950	48	19	27.08	6.25	4.16	14.58	4.16
Cambridge .	98,639	24	11	37.49	4.16	—	25.00	—
Lynn	72,497	27	11	3.70	—	—	—	—
Lawrence . .	69,766	18	10	5.55	5.55	—	—	—
Springfield .	69,389	23	10	17.39	4.35	—	13.04	—
Somerville .	68,110	14	5	42.84	—	—	21.42	—
New Bedford	67,198	29	19	55.16	6.90	—	44.82	—
Holyoke . .	49,286	17	11	58.82	5.88	—	41.17	—
Brockton . .	44,873	9	1	—	—	—	—	—
Haverhill . .	42,104	9	1	22.22	11.11	—	11 11	—
Newton . . .	37,794	6	—	—	—	—	—	—
Salem	36,876	12	7	33.33	—	—	33.33	—
Malden . . .	36,286	7	3	42.90	—	—	—	—
Chelsea . . .	35,876	12	3	16.67	8.33	—	—	—
Fitchburg . .	35,069	6	2	—	—	—	—	—
Taunton . . .	33,656	17	5	29.41	—	—	17.64	11.76
Everett . . .	28,620	7	5	14.30	—	—	—	—
North Adams	27,862	9	1	33.33	—	—	—	11.11
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,043	6	4	33.33	—	—	33.33	—
Waltham . .	25,198	6	3	33.33	—	—	16 67	—
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,589	5	—	20.00	—	—	20.00	—
Chicopee . .	21,031	5	2	60.00	—	—	20.00	—
Medford . . .	20,962	1	1	—	—	—	—	—
Northampton	19,883	5	1	40.00	—	—	—	—
Beverly . . .	15,302	6	3	66.67	—	—	50.00	—
Clinton . . .	15,161	6	2	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	—	—	—	—	—	—	—
Woburn . . .	14,300	10	—	20.00	—	—	20.00	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	5	—	60.00	—	—	20.00	—
Attleboro . .	13,677	3	1	66.67	—	—	33.33	—
Marlboro . .	13,609	4	1	—	—	—	—	—
Melrose . . .	13,600	3	1	—	—	—	—	—
Westfield . .	13,418	7	3	—	28.60	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	3	1	33.33	—	—	—	—
Framingham	12,534	3	—	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	4	0	50.00	—	—	25.00	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown . .	11,077	8	1	—	12.50	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 2,964; under five years of age, 1,097; principal infectious diseases (smallpox, measles, scarlet fever, cerebro-spinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 888, acute lung diseases 224, consumption 317, scarlet fever 16, whooping cough 21, cerebrospinal meningitis 7, smallpox 5, erysipelas 2, measles 7, typhoid fever 73, diarrheal diseases 386, diphtheria and croup 50.

From whooping cough, New York 12, Philadelphia 4, Baltimore 2, and Boston, Springfield and Beverly 1 each. From erysipelas, New York 1, Chicago 1. From smallpox, Philadelphia 5. From scarlet fever, New York 6, Chicago 2, Philadelphia 4, Baltimore 1, Fall River 1, Cambridge 1, North Adams 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Aug. 29 the death-rate was 16.0. Deaths reported, 4,616; acute diseases of the respiratory organs (London) 114, whooping cough 61, diphtheria 62, measles 60, smallpox 2, scarlet fever 32.

The death-rate ranged from 3.5 in Devonport to 26.3 in Sheffield; London 14.3, West Ham 18.3, Brighton 20.8, Portsmouth 17.1, Southampton 11.4, Plymouth 18.6, Bristol 9.8, Birmingham 18.7, Leicester 15.9, Nottingham 21.0, Bolton 16.5, Manchester 19.3, Salford 20.5, Bradford 14.5, Leeds 18.2, Hull 21.9, Newcastle-on-Tyne 20.4, Cardiff 11.5, Rhondda 15.3, Liverpool 20.8, Hornsey 10.0, Bootle 18.0.

METEOROLOGICAL RECORD.

For the week ending Sept. 12, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in Inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S.. 6	30.03	62	66	58	63	63	63	N	N W	14	3	C.	C.	0
M. 7	30.19	60	67	52	69	61	66	N W	N W	7	9	O.	C.	0
T.. 8	30.37	56	63	48	65	61	63	N	S	7	8	C.	C.	0
W.. 9	30.36	60	71	50	65	69	67	W	S W	6	15	F.	O.	0
T.. 10	30.14	68	76	60	79	85	82	S W	S W	10	12	O.	O.	0
F.. 11	30.08	74	83	64	82	55	68	W	N W	8	7	C.	C.	0
S.. 12	30.28	66	74	58	67	67	67	N W	S W	5	8	C.	C.	0
☞	30.21		71	56			68							.00

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

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A Handbook of the Diseases of the Eye and Their Treatment. By Henry R. Swanzy, A.M., M.B., F.R.C.S.I. Eighth Edition. Revised. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

Quiz-Compends. No. 16. A Compend of Diseases of the Skin. By Zay F. Schamberg, A.B., M.D. Third Edition. Revised and Enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

Quiz-Compends. No. 1. A Compend of Human Anatomy. By Samuel O. L. Potter, M.A., M.D., M.R.C.P. (Lond.). Seventh Edition. Revised and Enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

The Latin Grammar of Pharmacy and Medicine. By D. H. Robinson, Ph.D., with an Introduction by L. E. Sayre, Ph.M. Fourth Edition, with Elaborate Vocabularies, thoroughly revised by Hannah Oliver, A.M. Philadelphia: P. Blakiston's Son & Co. 1903.

Jahresbericht über die Fortschritte in der Lehre von den Pathogenen Mikroorganismen umfassend Bacterien, Pilze und Protozoën. Unter Mitwirkung von Fachgenossen bearbeitet und herausgegeben von Dr. med. P. von Baumgarten, o. ö. Professor der Pathologie an der Universität Tübingen, und Dr. Med. F. Tangl, o. ö. Professor der physiologischen Chemie an der Universität Budapest. Siebzehuter Zahrgang. 1901. Zweite Abtheilung. Verlag von S. Hirzel, Leipzig. 1903.

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Original Articles.

URETHRAL TUBERCULOSIS, WITH REPORT OF A CASE.*

BY ARTHUR L. CHUTE, M.D., BOSTON.

RELATIVELY few cases of urethral tuberculosis are reported; of the reported cases nearly all show extensive lesions of other portions of the genito-urinary tract, so that this lesion appears more as an incident in a urogenital tuberculosis than as a distinct disease. There are, however, instances in which the urethral lesion is the prominent one, though the disease is rarely, if ever, strictly confined to this organ. Urethral tuberculosis assumes the character of a distinct disease in proportion to the extent of involvement of the anterior urethra. When the posterior urethra only is involved, it is hardly to be distinguished from tuberculous cystitis or prostatitis.

The case which I have to report shows some particularly interesting features, in that the disease, while not confined to the urethra, was most marked in the anterior portion. The acute stage of the disease ran a favorable course without any treatment; healing of the urethral process was accompanied by calcification of the submucous lesions. Of this last condition I have been unable to find a similar instance.

P. C., a married laborer, thirty-five years old, was first seen in March, 1902. He had always been well with the exception of his present trouble. His family history was good. He never had any venereal trouble. Two years before he began to pass urine frequently, both night and day; urination was painful. At the same time the glands in his left groin enlarged very rapidly and were painful for some two or three months. He had several attacks of hematuria, the source of which seemed from the history to be the posterior urethra. Now and then he noticed a little discharge from his urethra, but this was neither constant nor profuse. He had discomfort referred to his perineum and rectum, particularly when he sat down. For a time he had painful erections, and coitus was impossible. During the following two years his stream gradually became smaller and his urinations more frequent; they remained painful. For some minutes after micturition urine would exude from his meatus a drop at a time.

Two weeks before he was seen, he felt a sudden pain during coitus; this was referred to the general region of the peno-scrotal angle; following this he had the feeling as of "something moving" at that point. There was increased difficulty in passing urine, and he felt that the obstruction was at the peno-scrotal angle. When seen he was having to urinate four times or more at night and very often during the day.

The man's general condition seemed good. There was no urethral discharge. He was able with difficulty to pass a few ounces of urine; the stream was very small. Following urination there was for some minutes a dripping of urine, a drop at a time. The urine was very pale, acid, specific gravity 1009; it showed a very slight trace of albumin. The urine contained a few shreds, which when stained showed pus and urethral cells, a few cocci and bacilli, but no gonococci. No renal elements were found in the sediment.

On palpating his urethra it had the feeling of a stiff tube of about the size of a 24 F. sound. At a point one and a half inches from the meatus there was a bulbous enlargement which was very hard; there was a similar enlargement near the peno-scrotal angle, at the point where he felt the sensation as of "something moving." By moving the urethra laterally at this point a perfectly distinct crepitus was gotten.

An attempt was made to explore his urethra with various sized instruments; finally a small silver probe was passed to the bulb; with this in place it was impossible to get crepitus. The probe gave a grating sensation when it passed the two bulbous enlargements.

His left groin contained a mass of glands three or four inches long and about an inch wide; they were very hard and felt as though they were calcified. These glands were not tender. The skin over them was thin but neither red nor attached. He said these glands had been painless and had not changed for more than a year. In his right groin the glands were only slightly enlarged.

His prostate was enlarged, particularly on the right, where there was a small, very hard mass, which felt like a calcified area. There was no tenderness in the renal regions. The kidneys were not palpable. There was no suprapubic tenderness. The testes, epididymes and vesicles showed no signs of disease.

Although at this time the etiology of the trouble was not at all clear, the indications for treatment seemed evident.

Gradual dilatation gave immediate relief to his frequency and difficulty in micturition. At first there was moderate bleeding; this gradually grew less. When dilatation had progressed somewhat, a third area of calcification could be felt in his deep urethra. After a few dilatations, I was able to remove with alligator forceps several irregular bits of calcified material; some from the point near the peno-scrotal angle and some from the point one and a half inches behind the meatus.

Since that time he has rarely had to urinate during the night. His diurnal frequency has been within the limits of normal. Urination has been painless and he has had less dribbling. A search for tubercle bacilli was made in this little material which could be gotten from the urethra, also in the urine; the results were negative, as was an inoculation test made in September, 1902. A second inoculation, made in January, 1903, was also negative.

In July, 1902, the glands in his left groin were removed. This was done largely in the hope that their examination might clear up the diagnosis. Dr. George B. Magrath of the Pathological Department of the Harvard Medical School reported that these glands showed amyloid infil-

*Read before the American Urological Association, in New Orleans, May 8, 1903.

tration, a condition which apart from general amyloid disease is very rare, and usually means tuberculosis somewhere in the territory of the lymphatics involved.

Dr. William B. Hills of the Chemical Department of the Harvard Medical School found the concretions were made up for the most part of carbonate and phosphate of lime, with traces of the corresponding magnesium compounds, also a minute trace of triple phosphate.

The patient is still under observation. At the present time (April, 1903), his urethra allows the passage of a 25 F. sound. Slight grating can be felt at a point one and a half inches from the meatus, at the peno-scrotal angle and at a point in the membranous urethra. On several occasions small pieces of calcified material have been removed, and frequently after instrumentation he has passed fragments of the same. He has at present no subjective symptoms other than an occasional feeling of discomfort in the rectum. Endoscopic examination shows an abnormally pale, fibrous-looking canal, for the most part smooth, but with an occasional small eroded spot, also with little fibrous tabs which project into the lumen. The canal is very stiff, and instead of rolling in about the end of the endoscope stands rigidly open, as though distended with air. At one or two places little whitish points are seen, which are apparently little bits of calcified material projecting through the mucous membrane.

His prostate remains about as at first, larger on the right with the same apparently calcified nodule. The left lobe is smaller but more sensitive. After very gentle massage the urine contains bloody shreds, showing that the prostatic process is not entirely quiescent. The rectal discomfort which he occasionally feels he refers to the left.

In spite of not finding tubercle bacilli, the non-venereal origin, the symptoms, the course of the disease and the outcome warrant the conclusion that this patient had an urethral tuberculosis. The condition of the inguinal gland adds confirmatory evidence.

In this instance the tuberculosis involved particularly the glandular elements of the canal. During the healing process there was a deposition of lime salts in the diseased glands, similar to that seen from time to time in other tuberculous glands. These masses gradually ulcerated through the mucous membrane into the urethra. The mass at the peno-scrotal angle was apparently more or less cylindrical, and after fracture, the two sections not being in perfect alignment, the difficulties of urination were increased. The feeling of "something moving" was produced by the ends rubbing together.

The condition found in this patient bears no resemblance to the many reported cases of urethral calculi. I have been unable to find any reported case in which a similar deposition of lime salts has taken place. Case I of Berard and Trillat is the nearest approach. This refers to a child with urethral tuberculosis, in whose urethra they felt what seemed to be points of calcification. The child was under observation only a very short time. The description of the case is very meager.

A brief review of tuberculous urethritis is of interest in connection with this case. What follows applied more particularly to tuberculosis of the anterior urethra. Tuberculosis of the posterior urethra is so intimately connected with tuberculosis of the bladder and prostate that it does not present a distinctive picture.

All writers agree that it is a rare disease. Few textbooks give it more than casual mention. The lesions of the anterior urethra are much rarer than those of the posterior urethra.

Ahrens [1] gives the findings of several observers as to the frequency of urethral tuberculosis; all of these are based on autopsies. Steinthal is quoted as having found 6 instances of urethral involvement in 24 cases of urogenital tuberculosis; Krzywicki, 5 instances in 29 cases; Pavel in 1,455 autopsies on tuberculous subjects found urogenital tuberculosis 380 times, but urethral lesions in only 7 of these cases.

Halle and Motz [2] state that for the past twelve years there have been at the Hospital Necker from 12 to 15 deaths a year from genito-urinary tuberculosis; that during this time they have found but 12 cases of urethral tuberculosis.

The disease occurs in early childhood and in old age, but is, like all forms of urogenital tuberculosis, much more common during the years of sexual activity. In the reported cases men have been affected much more often than women. This greater frequency in men can be attributed to several very evident reasons: the greater length of the male urethra; the fact that it is more often the seat of post-gonorrheal lesions; the ease with which the urethra can be infected in tuberculosis of the genital organs proper.

It is probable that a previous gonorrhea has some influence on the occurrence of urethral tuberculosis, especially when it is followed by chronic urethral lesions. A previous gonorrhea has been noted in a large number of reported cases, and it seems reasonable to suppose that a diseased urethra is a more favorable soil for tuberculosis than a healthy one.

Keyes [3] and Alexander [4] both believe that pus infections of the urethra predispose to tuberculosis.

While a previously infected urethra is probably a more favorable soil, many cases are reported in which there seems to be no question of a previous gonorrhea, as cases by Berard,[5] Stone,[6] Halle and Motz [2] and other writers.

The source of the infection in urethral tuberculosis has excited a good deal of interest and some controversy.

Baumgarten is cited by Ahrens as having produced a classical urethral tuberculosis by injecting tubercle bacilli into the urethra of a buck rabbit. The conclusion which he drew from this was *not* that infection was usually from without, but that the urethra had no peculiar immunity to the tubercle bacillus. He felt that the opportunity for infection from without was usually lacking, because, according to his statement,

patients with genito-urinary tuberculosis ordinarily have little sexual desire.

Paladino Blandini [7] found that it was possible for tubercle bacilli, when introduced into the urethra of animals, to traverse the canal and set up a tuberculous epididymitis. He found the bacilli could be diffused through the whole genito-urinary tract in a relatively short time. He reported no instances in which he noticed urethral tuberculosis following the introduction of tubercle bacilli into the canal.

Several cases of tuberculosis of the glans penis are reported in which the process extended to the urethra either by perforation, (Poncet,[8] Kraske,[9] Hartmann [10]) or by extension through the meatus (Erhmann [11]). In these instances the infection was by continuity.

These facts point to the possibility of infection through coitus, but I have been unable to find a single reported instance in which it seemed probable. Hogge [12] goes so far as to say that there is not on record a single case of primary tuberculosis of the anterior urethra.

Kraske [9] thought that in his case of tuberculosis of the glans, which extended to the urethra, the infection was probably through the blood stream, as no tuberculous lesions of the genital or urinary apparatus could be discovered. The case did not come to autopsy.

Alexander [4] has suggested the possibility of a well kidney excreting tubercle bacilli, and that these bacilli might, in an urethra previously damaged by pus infection, set up a tuberculosis. Halle and Motz [2] speak of the difficulty in any given instance of ruling out the possibility of a small area of renal tuberculosis.

While it is impossible to say that the urethral infection may not in rare instances be primary, either from without or by the blood stream, the weight of clinical evidence shows that it is in almost all instances secondary to other tuberculous lesions of the genito-urinary tract.

In the cases which have come to autopsy there have been present, almost without exception, other lesions of the genital or urinary tract. Usually some of these other lesions have had the appearance of antedating the urethral trouble. In almost every instance there has been disease of the deep urethra. In some instances the disease in the anterior urethra has been less marked, as it approached the meatus in Kidd's [13] case. In young children the process is necessarily secondary, except for the possibility of hematogenous infection.

Urethral tuberculosis may be secondary to a purely genital tuberculosis or to a tuberculosis of the urinary tract. The first is illustrated by the case I have reported, the second by Michaut's [14] case. Usually there is disease of both the urinary and genital tracts.

Lesions of the prostate, epididymes and vesicles are nearly always associated with urethral tuberculosis, and the extension to the urethra seems commonly to be by way of these organs.

It seems rather improbable that the mere passage of urine can often infect a healthy urethra, even when that urine contains tubercle bacilli in considerable numbers. When there are old lesions of the canal, either infiltrations, which interfere with the action of the accelerator urinæ, or obstruction to the passage of urine, the probability of this manner of infection is increased. I have found but one instnce in which an autopsy has shown a urethral tuberculosis as secondary to a purely urinary lesion. This is the case reported by Michaut.[14] In this patient there were no lesions of the genital organs or of the prostatic urethra, and the infection must have been by way of the urine. The patient gave the history of two attacks of gonorrhea, the last three years previous to the time of observation. As the urethral discharge had persisted since the second attack, it is reasonable to suppose that there were chronic lesions of the urethra which made it particularly susceptible. The patient had renal tuberculosis. In both genital and urinary infections the process seems usually to get a foothold in the prostatic urethra and then gradually to extend to the anterior part of the canal.

The lesions in urethral tuberculosis can be conveniently grouped under three headings: those of the mucous membrane; those of the corpus spongiosum; and those of the periurethral tissues.

Two sorts of lesions of the mucous membrane are commonly seen — the granulation and the ulcer. To these lesions Ahrens [1] and Halle and Motz [2] add the diffuse caseous infiltration.

The granulations or tubercles vary considerably in color and size. They may be either gray or yellow; they may be the size of a pin-point, as in Halle and Motz'[2] Case III, or the size of a pea, as in Michaut's case. Sometimes few are present, at other times the urethra is studded with them.

The ulcers also differ within wide limits. They may be small and superficial, as when the covering layer of a granulation has been destroyed, or the mucous membrane of nearly the whole urethra may be destroyed to its full depth.

Diffuse caseous infiltration is the name applied when a considerable area of the membrane has undergone the pre-ulcerative tuberculous infiltration.

Of the mucous lesions, the ulcer is the most common. The granulations and diffuse infiltrations are less often seen, presumably because they give place to ulcerations within a relatively short time. In the case reported by Michaut,[14] he had the opportunity of watching the evolution from granulation to ulcer.

Lesions of the corpus spongiosum are for the most part direct extensions of lesions of the mucous membrane; they may be infiltrations, ulcerations extending into the substance, or cavities filled with pus and granulations. Occasionally the process is for the most part confined to the urethral glands, with relatively little disease of the spongiosum, as illustrated by my case. Instances have been noted where the spongiosum was infiltrated without any neighboring lesion of the mucous membrane and separated from it by an area of non-tuberculous tissue (Halle and Motz [2]). The process in the spongiosum is, how-

ever, usually a direct extension of the disease from the mucous membrane.

The name "periurethral" has been given to all processes extending outside the fibrous sheath of the corpus spongiosum. They may be little abscesses which resemble the suppurative folliculitis seen in pus infections; when they open externally they usually leave persistent fistulæ. In the other extreme the whole perineum may be infiltrated, or converted into one or several cavities filled with pus and granulations. These pus collections may open spontaneously, but more often they are incised to relieve symptoms. They are usually followed by fistulæ with pouting granulations.

Quite a distinct type of periurethral tuberculosis is that affecting the glands of Cowper. Englisch [15] was one of the first to call attention to the nature of this lesion. In typical cases there is a slowly-growing, more or less circumscribed tumor in the perineum, which usually goes on to suppuration, and either opens spontaneously or is incised, leaving a urinary fistula. Where the process bursts through the capsule of the gland, the perineum may present a general boggy, infiltrated condition. Instances have been reported in which this process in a Cowper's gland has become cystic.

While the periurethral lesions usually extend from the under surface of the urethra, some extend from the roof and appear in the septum between the corpora cavernosa, or invade the corpora themselves. This extension is supposed to take place commonly through the urethral glands.

Symptoms. — Since in urethral tuberculosis there is almost always a certain amount of involvement of the posterior urethra, frequency and tenesmus are early symptoms. For the same reason hematuria is often seen. This hematuria, however, is not necessarily from the prostatic urethra. Michaut's [14] case, in which there were no lesions of the deep urethra, presented it. In that instance it was presumably of renal origin. So, too, the frequency and tenesmus may be due to associated renal or bladder disease. Incontinence has not been a very unusual symptom; Senn [16] and Malécot [17] report cases, as do others. It is presumably due to involvement of the posterior urethra.

The symptoms which are due solely to involvement of the anterior urethra are: discharge, pain on urination, nodular enlargements of the urethra, signs of obstruction to urination.

The discharge in urethral tuberculosis is commonly scanty and whitish rather than purulent. It has the appearance of the so-called "gleety discharge." It not infrequently follows without appreciable interval the discharge of a gonorrheal urethritis. Senn [16] reports a case in which there was a profuse purulent discharge and the meatus had the puffy appearance seen in gonorrheal urethritis.

Pain on urination is a pretty constant symptom. Its location and extent depend on the situation and amount of the urethral disease. It is usually a moderate sensation of burning. It has been likened in some patients to the ardor of acute gonorrhea. It differs from this in that it usually persists for a much longer time.

A nodular condition of the urethra is less common than the discharge or pain. It is probably never seen while the disease is strictly confined to the mucous membrane. The nodes are more numerous than those seen in the glandular involvement of gonorrheal urethritis. They are usually along the floor of the canal.

In certain of the reported cases obstruction to urination has been a prominent symptom. In some instances it is undoubtedly due in part to a previous pus infection. In others it is purely the result of the tuberculous process, as in Case I, Berard and Trillat,[5] Stone's [6] case, Malécot's [17] case, Halle and Motz' [2] eleven-year-old child, my patient and others.

In the instances where the obstruction is purely the result of the tuberculous disease, it may be of two sorts — that due to stricture and that due to infiltration. Because of the deep ulceration of the urethra true stricture may come on relatively early. These strictures are not infrequently multiple (Berard,[5] Stone,[6] Halle and Motz [2]). The other type of obstruction may arise even earlier, and is caused by a submucous infiltration which encroaches on the lumen of the canal (Halle and Motz, Case II; my patient).

The painful erections from which my patient suffered for a time seems to be an unusual symptom. Judging from his description, they were not of the acuteness of gonorrheal chordee.

Diagnosis. — The finding of tubercle bacilli in the urethral discharge is undisputable proof. Granulations or multiple ulcers of the urethra are almost pathognomonic. A urethral discharge with no history of exposure to venereal infection is very suggestive, especially so if no gonococci can be found. This last condition when combined with tuberculous lesions of the urinary, or particularly of the sexual organs, makes the diagnosis fairly certain. Stricture or the symptoms of urinary obstruction, coming on relatively soon after the onset of a urethritis, should raise the question of a tuberculous origin, as should the presence of any considerable number of indurated points in the corpus spongiosum. If there are enlarged inguinal glands, their examination may throw light on the nature of the condition.

Prognosis. — As this disease is so essentially a secondary one, the prognosis depends very largely on the extent and importance of the primary focus. If we base the prognosis on the reported cases it is very bad indeed; the great majority have terminated fatally. The disease has as yet received so little attention from clinicians that I doubt if the reported cases give an accurate idea of it. There can be no doubt that the prognosis is grave, and that the cases that recover will run a long and tedious course. It is to be expected too that in a large proportion of the recovered patients the urethra will show marked secondary changes.

Englisch [15] reports a case that recovered; the patient was under treatment for a number of

years. Poncet [8] has reported recoveries, as have Kraske,[9] Halle and Motz [2] and others.

Treatment. — Treatment must depend in the first instance on the extent of the primary tuberculous disease. In a considerable number of cases it will have to be purely palliative, it being manifestly improper to subject a patient with a hopelessly advanced pulmonary or renal tuberculosis to any considerable procedure for his urethral trouble.

In all patients with urethral tuberculosis the hygienic treatment should hold the most important place. In connection with this, forced feeding, arsenic, guaiacol, creosote, together with the aids to appetite and digestion, are of service.

I wish to call particular attention to the advantages of seashore camping for patients with the various forms of genito-urinary tuberculosis. It is of great advantage in the case of poor patients, as the expense can be made very slight. In this climate the tent life can be carried out for at least four months of the year and sometimes for longer. The work of camp life, fishing and the like, keeps the patient occupied and out-of-doors. He is of little danger to others as a source of infection. If he is troubled with frequency of urination, he is where he can relieve himself at almost any moment, without embarrassment. A patient with a marked tuberculosis of the bladder improved greatly under such conditions during last summer, and the expense, which was to him all important, was very small.

As regards the local treatment by applications to the urethra, I feel there is a great question as to its utility or desirability. Any instrumentation is usually very painful in urethral tuberculosis, and the possibilities and dangers of a mixed infection must be borne in mind. Hogge,[12] however, recommends the use of injections or irrigations. Solutions of nitrate of silver, so commonly used in chronic urethral troubles, seem to be particularly badly borne by these patients. Very weak corrosive solutions, or iodoform suspended or in emulsion, seem more desirable.

When the lesion is of the mucous membrane, or consists of a moderate involvement of the corpus spongiosum, I feel that one should depend on general hygienic treatment during the acute stage. I would make the only exception to this, those instances where a stricture or infiltration offers obstruction to urination; here internal urethrotomy should be done. In the instances where the disease in the spongiosum goes on to the formation of tuberculous cavities, these should be laid open and either curetted or cauterized. This applies to all sorts of periurethral disease with pus cavities. When the urethra is greatly ulcerated, perineal urethrostomy, as carried out by Poncet [8] and in Berard and Trillat's [5] second and third cases, will give great relief and may bring about recovery.

In some instances of very advanced disease, amputation is the best procedure, as in Kraske's [9] and Hartmann's [10] cases. When the disease is marked, but almost wholly confined to the anterior part of the canal, a temporary perineal fistula would probably be of help. I know of no instance where this has been purposely carried out. In Englisch's [15] Case I, a fistula resulted from opening a perineal abscess; this fistula persisted for some years, the urethral disease recovering during that time. Whatever operative procedure may be indicated, the importance of keeping up hygienic treatment must not be overlooked. The patients who recover will probably all require more or less treatment for the secondary lesions of the urethra: dilatation or urethrotomy for strictures or narrowed places; plastics for the closure of persistent fistulæ. When the strictures are multiple and intractable, or when there are fistulæ with so much loss of substance that they cannot be closed, Poncet's operation of perineal urethrostomy may be advisable.

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A NOTE ON THE TRANSMISSION OF WHOOPING-COUGH BY INDIRECT CONTAGION.

BY JOHN LOVETT MORSE, A.M., M.D., BOSTON.

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DURING the epidemic of whooping-cough in Boston last winter I was repeatedly asked whether or not whooping-cough could be carried by third persons or by clothing, and whether the disease could be contracted by going into a house in which there was whooping-cough, providing there was no contact with the patient. On the answers to these questions depended, of course, the management of the isolation. When I attempted to answer these questions I at once found that, although I had pretty definite opinions on these points, they were not based on any reliable data. I then attempted to get some more accurate information from the various textbooks, but found in them nothing but the most general statements, which showed very plainly that their authors were in much the same predicament as myself.

I then wrote a circular letter to the members of the American Pediatric Society, thinking that they, if any, would be able to furnish answers to these questions. The letter was as follows:

I am anxious to get some data as to whether whooping-cough may be transmitted by clothing or third persons. I am also anxious to get some data as to whether it may be

contracted by going into a room or house in which there has been a patient with whooping-cough, there being no direct exposure to the patient.

Some textbooks say that whooping-cough may be transmitted through third persons; others that it may be, but probably rarely is; others refrain from making any statement.

You will oblige me greatly by giving me your personal opinion on these points, and also any data which you may have which prove that whooping-cough may be transmitted through clothing, third persons or houses.

Replies were received from forty men. Thirty-seven gave no data; three reported five cases, one of which seemed to me rather doubtful. These cases were briefly as follows:

Dr. C. W. Townsend, Boston: A baby of eighteen months had never been in a railway car or in any house or carriage but its own. A friend came directly from a whooping-cough house, wearing the same clothes and muff that she had worn there. She allowed the baby to play with the muff which she had held in her hand when she was visiting and talking with the children with whooping-cough. No other exposure was known.

Dr. C. G. Jennings, Detroit: The eight-months-old child of a physician was very carefully watched and guarded. The children of its wet nurse lived about a mile away, and were taken sick with whooping-cough unbeknown to the doctor. Their mother visited them two or three times during the first two weeks of their cough. Within ten days of her last visit the physician's infant came down with whooping-cough. There was no other exposure.

Dr. C. G. Jennings, Detroit: An infant who was very carefully guarded from exposure was taken sick with whooping-cough, the source of which could not be made out. Repeated inquiry drew out the fact that about a week before the child began to cough the mother had unpacked a trunk containing a number of articles of child's clothing, among them a quilted hood that several months before had been worn by an infant through the greater part of an attack of whooping-cough. This hood was worn by the infant in question throughout one day.

Dr. D. J. M. Miller, Philadelphia: A family of adults loaned one of two copies of a book to the children of some friends who had whooping-cough. After four weeks the book was returned and placed upon the shelf alongside of its fellow. The son, twenty-four years old, who had never had whooping-cough, desiring to ascertain which of the copies had been used by the children with whooping-cough, and, knowing that a cresolene lamp had been used in the treatment, picked up one of the volumes which happened to be the one loaned to the children and smelt of it, passing the leaves to and fro before his nose as one does in looking rapidly through a book. In twelve days he developed whooping-cough. Other exposure, although unknown, cannot be positively excluded in this case.

Seven gave no opinions on the questions asked, probably because, as two of them said, opinions are of no value. Five thought that third persons may carry the contagion; six that they may, but rarely do; two that they probably may carry it; seven that they possibly may carry it; three that they may possibly carry it if they are coughed or vomited on and the exposure occurs very quickly. One thought that the contagion is not likely to be carried by third persons; one that it practically is not carried; four that it is very doubtful if it can be carried.

Two thought that clothing may carry the contagion; four that it may, but rarely does; two that it probably may carry it; and three that it possibly may carry it. One thought that it is not likely to be carried in the clothes; one that it is practically not carried; and four that it is very doubtful if it can be carried.

One thought he had seen whooping-cough develop after entering a room in which a whooping-cough patient had been. Six thought that whooping-cough may be contracted from rooms which have been occupied by patients with whooping-cough, but that it rarely is so contracted. Two thought it may possibly be contracted in this way. One suspected that it may be contracted in this way, while four were very doubtful if it can be.

Three men gave hospital experience going to show that contagion is not carried by third persons; and another, hospital experience going to show that it is not carried in clothing.

Two stated that they took slight precautions against carrying contagion when seeing cases of whooping-cough. Three stated that they took none. I regret that one of my questions was not what precautions were taken against contagion when seeing cases of whooping-cough. It seems to me that the answers to this question would have shown more truly how the men really felt as to the chances of carrying contagion themselves or in their clothing than do those to the others.

It seems hardly possible to draw any very positive conclusion from these replies, except that very little is known as to the indirect contagiousness of whooping-cough. The cases reported, although very few, seem to justify the presumption that whooping-cough may be carried by third persons or by clothing and other articles. The fact that forty men of such wide experience have seen such a small number of cases in which they could satisfactorily to themselves exclude direct contagion shows, however, that it must be very seldom that whooping-cough is carried in this way.

THE ILL HEALTH OF FRANCIS PARKMAN.

BY GEORGE M. GOULD, M.D., PHILADELPHIA, PA.

(Concluded from No. 13, p. 338.)

(5) *Cerebral reflexes.*—In his boyhood Parkman had headaches, and was spoken of as "a headachy child;" but in his adult life, according to his sister, he did not have what was ordinarily called headache, although Farnham speaks of "pains in the head" as continually sapping his force. The most revelatory statement I have been able to get from Miss Parkman is that the expression he used most was that his head was "stirred up," and that this was used by him when he could not work or listen to reading any longer. Miss Parkman understands by this expression what physicians call subjective vertigo and an indescribable confusion. Objects did not whirl or seem unstable, but the patient himself. There was also a rush of vague and uncontrollable sensations. Sometimes these were roused by talking or noises, so that silence was necessary even at meals in order not to bring on irritation. From a study of the few hints I can gather I feel that the morbid reflexes from the eyes kept his brain in a chronic state of hyperesthesia, the centers so surcharged

that he was in a constant state of great tension, and a slight excess of irritation at any time was more than could be correlated or drained off physiologically. It was his splendid will and by infinite precautions that he could prevent harmful results.[12]

From this cause also what is commonly called irritability or temper was never shown. His sister remembers no cross, unkind or petulant expression to have escaped him, however great the provocation. His beautiful mind seemed guarded against such outbreaks by a subtle feeling that it was his own nervous mechanism that was at fault. He never mistook the "wild whirl" in his head as caused by any whirl of the outside world. When it was impossible for him to listen longer to reading, or to conversation, or to apply himself mentally to any work, he seemed to find relief in inventing a string of nonsensical or ridiculous stories *à propos de rien*. Introspective he was not, and as to neurasthenia, hysteria or melancholy, the words are not to be thought of. Finally it must not be forgotten that the vagueness of the cerebral symptoms is no proof of their unreality or lack of intensity, as shown by the fact that he was supposed to be on the verge of insanity, and that first and last he consulted many physicians about his condition of mind and nerves. There was nothing vague, however, about his terrible and lifelong insomnia, which was certainly a consequence of his eyestrain.

The reactions or responses of each organism under the morbid stimulus or "insult" of eyestrain differ from those in any other case. That every case of disease is individual, impossible to bring into any narrow or exact classification is of course a truism in medicine. The typical case exists only in the textbook. But holding the essential fact in view one easily recognizes a common law that runs through and harmonizes all individual variations and renders clear the unity in all exceptions. All this is illustrated and verified by Parkman's case. In a general way the symptoms in severe cases of eyestrain roughly divide patients into three classes: (1) Those in whom the reflexes are to the eyes themselves, resulting in inflammations, disordered function and local diseases of many varieties. (2) Those to the brain, followed by a large variety of kinds of headache, psychic and nervous abnormalism, insomnia, etc. (3) Those to the digestive and nutritional systems, with "biliousness," anorexia, dyspepsia and any of the diseases of denutrition. It goes without saying that these types may be mixed in infinite degrees of complexity and intensity, but as a rule a certain case belongs in one of these three classes.

When the reflex is exclusively to the organs of nutrition, as in Carlyle's case, the mental concomitant is likely to be hypochondriasis, irascibility, etc. In Parkman's case the morbid reflexes expended themselves upon the eyes and the cerebral centers. Cheerfulness and a noble high-heartedness are noteworthy characteristics of the man, although none ever had better reason for despair and complaint. That neither black bile nor yellow bile tinged Parkman's brain is shown by the following sentence written of himself:

> His dislike of everything morbid — melancholy, misanthropy, depression — amounted to abhorrence, and if he could not be cheerful he went away if he was able; and if not, he held his tongue or turned to merry thoughts.

In many cases of reflex ocular neuroses we can find crises of the resultant symptoms occurring at certain life periods. In Parkman's case these crises are not evident. But one exists with any clearness, that of presbyopia. The others are at best masked. But one can see why they are masked. As in everything else this man was exceptional, logical to the limit. Every day and year was critical. He was of the heroic type, and not measurable by our little rules of thumb, applicable to the weaker and commoner man. Evidently his eye defect was of an exceptional kind, such as a low degree of unsymmetric astigmatism and anisometropia would produce. I say a low degree, because Parkman had sharp distant vision, showing that he could neutralize the abnormalism for distant vision. Most surely he could only do so for a minute or so at a time for near vision. A man of his iron will and exactness would also never give up the attempt to do so as long as it was humanly possible. I have known hardly any patient so incapable of reading and writing as he, or with a photophobia so intense. His astigmatism was of a kind that his ciliary muscle or his accommodative power could in adult life bear the strain of the attempt to neutralize it at near range for but a minute or two at a time. Even as a boy it produced headaches and truancy, and the crisis of adolescence is represented by the breaking off the college course by the trips to Europe. Using up each minute every infinitesimal gathering of accommodative power, both ocular and cerebral, by his studies and by the intensity of his nature, crises could not be as marked and differentiated as in less stalwart men and less resistant cases. Hence the steady decrease of reading and writing power went on exactly *pari passu* with the yearly lessening of the power of the ciliary muscle to overcome the lenticular inelasticity. The eyeglasses prescribed or that he picked up could only further mask the critical periods that would normally have appeared in early manhood and at the usual presbyopic time of life.

Even with the life of terrible suffering he had lived, and with the resultant injuries to the ocular and cerebral centers, the completion of presbyopia at about sixty brought him, as it does all others, a comparative ease and happiness and power of using the eyes during the last ten years of life. "During the last few years of his life," says Farnham, "his eyes allowed him to write quite freely for very short periods of time. Thus he was able to write out by himself with pencil on orange-colored paper the greater part of his

[12] Influences tending to depress the mind had at all times proved far less injurious than those tending to excite, or even pleasurably exhilarate, and a lively conversation has often been a cause of serious mischief. A cautious vigilance has been necessary from the first, and this cerebral devil has perhaps had his uses as a teacher of philosophy. (Autobiography.)

'Half Century,' and 'Montcalm and Wolfe.'" "He was better and a happier man after sixty," said his sister to me. "From the earliest of his married life," adds Farnham, "onward till near the close, the condition of his brain seemed to make it necessary for him to be silent and alone most of the time. But, as years rolled on, the improvement in his health, the easier progress of his labor and the development of his sympathy enabled him at last to meet life with happier moods and habits."

There can be no doubt in the mind of the modern ophthalmologist as to the cause of Parkman's eyestrain and hence of all its results. Every symptom enumerated can be entirely and only accounted for on the supposition that he had hyperopic astigmatism, probably unsymmetrical, and with anisometropia. There is every reason for the conviction that he had no organic disease of the eyes. He saw as well at night as other people, and so had not any form of retinitis. He recognized things and people so accurately in the daytime that one may be sure there was no considerable amblyopia or other limitation, or organically-caused defect of vision. No operation except upon the lids was ever performed upon his eyes.

I had written thus far from all the data that I could gain by reading and correspondence. It now occurred to me that a personal search might win the confirmation of my view which, not needed by oculists to bring conviction as to the true nature of Parkman's disease, would serve to prove the necessary inferences I had drawn, and would also make the fact plainer to general physicians and laymen. I therefore made a journey to Parkman's home, and after an active hunt of the records of oculists, physicians and of opticians I secured precisely the scientific confirmation of my theory desired. I found that Parkman from the first had not failed, at least partially, to recognize — how could he fail to do so? — the importance of his ocular condition. In 1849 he had gone to New York, and for a long time placed himself under the care of an oculist. No good, of course, came of it, and as this specialist is now dead we could not learn much of value from any case records that might still exist. The ophthalmoscope had not yet been invented, and as for astigmatism none had thought of it as having a pathogenic significance.

By the courtesy of an optical firm I found the following filed prescriptions:

(1) One from an excellent oculist dated April 12, 1881, ordering:

For the right eye + Sph. 2 + Cyl. 0.50 ax. 108°.
For the left eye + Sph. 2.75.

(2) From another equally competent specialist in 1883:

R. + Sph. 2.75 D.
L. + Sph. 2.75 D.

(3) From the same oculist, in 1885:

R. + Sph. 3.00 D.
L. + Sph. 3.00 D.

(4) In December, 1890, another equally trustworthy oculist ordered:

R. + Sph. 3.25 D.
L. + Sph. 3.25 D.

In addition he was wearing prior to 1881 from a famous European oculist:

R. + Sph. 2.25 D.
L. + Sph. 2.60 D.

I was greatly aided in my search by the courtesy of several oculists, who kindly placed their case records at my disposal.

I may at this point settle the question as to any abnormal or inflammatory disease of the retina. One oculist had kept no case records of Mr. Parkman's case. A second had made no entry as to any retinal condition, and being a capable ophthalmoscopist he would have noted the fact had the funduses of the eyes not been normal. The third positively placed in his notes "Fundus normal." Had this testimony not been found, the ignorant-wise might have said that Parkman must have had some retinal disease that caused the inability to read and the photophobia.

The notebook of one oculist says that the patient had recently consulted a most famous nerve specialist whom he had journeyed to see on account of "pressure and confusion in the head," which symptoms came on with literary overwork or excitement. This man had ordered some bicarbonate of soda and wet packs. Many years before Parkman had tried hydropathy and he would no more of it.

We see, therefore, that one European oculist found some difference in refraction in the two eyes but no astigmatism. An American oculist found a similar difference in the hyperopia of the two eyes, and he alone of all found astigmatism "against the rule." Three other prescriptions by two different oculists were for nonastigmatic lenses, alike in both eyes. A revelatory and explanatory fact was found in the case records of one of the latter oculists. This was that the astigmatic lines of the test card running at about axis 120° (judging from the penciled diagram drawn in the notebook) were chosen by the patient as being the plainest at fifteen feet distance, as seen by the right eye, and those running about 155° or 160° were seen more clearly with the left eye. Why glasses correcting this astigmatism were not ordered I do not know. Why the astigmatic correction ordered for the right eye by the other oculist was put at 180°, and why no correction of astigmatism was ordered for the left eye is also not clear.

I may parenthetically state that one oculist found the acuteness of vision in the right eye with — Cyl. 0.5 D. ax. 90° a little less than normal, and with + Sph. 0.25 that of the left eye was about the same. The oculist who noted that the patient chose the asymmetric astigmatic lines found the "media good," and that without any correcting lenses the visual acuteness was with the right eye 12/20, and with the left less, that is, a little more than one-half that of normal eyes.[13] If any deduction is justified by this it is only that there was a decided lessening of the 20/20? visual acuteness from 1881 to 1889, when it was men-

[13] He also notes — what was to be expected — that there was no hyperphoria and, as measured by vertical prism diplopia, no considerable exophoria or esophoria.

tioned as only 12/20 or less. As the "media were good" at the latter date no cataract was present. Retinal sensibility was doubtless dulled by the life of abnormal function. Confirmatory of this is the fact that Parkman used a crossed cylinder hand lens during the last years of his life, besides his spectacles, to magnify the size of printed letters.

Incidentally we may understand how it was that Parkman did not get all the relief from completed presbyopia that others do. It was because, with his intense will and powerful innervation, presbyopia was probably never quite complete, and some ability to overcome his hyperopia and astigmatism would remain farther into old age than with others. The same fact also suggests that his astigmatism and hyperopia were always masked, and consequently underestimated without mydriasis, by the patient's exceptional ability to conceal it by his accommodation. Hence, in part, at least, the differences among oculists in estimating the ametropia and in discovering the very existence of astigmatism. It should also be noted that with an organization both mental and neurologic, dominated as it were by a passion for exactness, the comparatively low astigmatism and anisometropia that could be neutralized for only a minute or two at a time would be exceptionally tormenting, its conquering never renounced, nor never for more than an instant overcome.

From comparison of all the data the demonstration is therefore perfect that:

(1) Parkman had unsymmetric astigmatism.

(2) There was a certain difference in the hyperopia (that is, anisometropia) of the two eyes.

(3) There was a probable difference in the amount of astigmatism of the two eyes. Most important is the fact that it was unsymmetric.

(4) This unsymmetric astigmatism and anisometropia was not corrected by any of the glasses that were ordered for him.[14]

(5) These ametropic defects were of such a low degree that prior to completed presbyopia they did not prevent fairly accurate distant visual acuteness, the power of accommodation being sufficiently great to neutralize them for this purpose.

(6) But they were so high that even with Parkman's marvelous vigor of will and innervation they could not be overcome for but a minute or two, or at best five, at near range (that is, in reading and writing), and during many years, not even for a minute.

(7) The effort of overcoming the unsymmetric astigmatism and anisometropia was so great and so expensive of nerve force that it resulted in the ocular and cerebral symptoms enumerated.[15] The almost unexampled severity of these symptoms was exceptional, because of the heroic resolution of the man and his indomitable perseverance in his chosen work.

[14] Two of the sets of lenses I have before me as I write, and the fact is proved true by "neutralization."

[15] People who cannot hold their arm horizontal for five minutes think it is exaggeration when a worse muscular and nerve strain cannot be endured by steady innervation of the ciliary muscle for ten or fifteen hours a day!

The professional lesson. — Parkman had the best professional advice that the medical science of his time could offer. He consulted the best physicians of Europe and of America, but all, in fact, in vain. During the last fifteen years of his life, after Dr. S. Weir Mitchell and other Philadelphia physicians, about 1875, had demonstrated the relief of reflex ocular diseases by means of the correction of astigmatism, Parkman might have and should have found at least some relief, and at least might have learned the solution of the terrible mystery of his life which had made tragedy of its every day. Prior to 1868 he had written as follows of his experiences with our profession:

> Meanwhile the faculty of medicine were not idle, displaying that exuberance of resource for which that remarkable profession is justly famed. The wisest indeed did nothing, commending his patient to time and faith; but the activity of his brethren made full amends for this masterly inaction. One was for tonics, another for a diet of milk; one counseled galvanism, another hydropathy; one scarred him behind the neck with nitric acid, another drew red-hot irons along his spine with a view of enlivening that organ. Opinion was as divergent as practice. One assured him of recovery in six years; another thought that he would never recover. Another with grave circumlocution, lest the patient should take fright, informed him that he was the victim of an organic disease of the brain which must needs dispatch him to another world within a twelvemonth; and he stood amazed at the smile of an auditor who neither cared for the announcement nor believed it. Another, an eminent physiologist of Paris, after an acquaintance of three months, one day told him that, from the nature of the disorder, he had at first supposed that it must, in accordance with precedent, be attended with insanity, and had ever since been studying him to discover under what form the supposed aberration declared itself, adding with a somewhat humorous look that his researches had not been rewarded with the smallest success.

Farnham also says:

> His general troubles were believed by the doctors to "come from an abnormal state or partial paralysis of certain arteries of the brain."

The last statement, while we smile, may afford a little instruction, because it is so characteristic of some puzzled practitioners when in the presence of a baffling mystery to fly to a word or term, or a far more mystifying explanation, and call that diagnosis.

The query remains as to Parkman's quizzical but no less terrible arraignment of us. There can be no more loyal member of the medical profession than I, none who believes more thoroughly that it is motived upon an earnestness and unselfishness of purpose unequalled in any so large body of men, none who is more deeply convinced that the brethren of his guild are doing more for civilization and the world's regeneration than any other; and yet, in the face of the long delay before the pathologic significance of ametropia was discovered, before the still more criminal silence and neglect and even opposition to that truth by so many physicians since the discovery was made, — the philosophic observer gets a decided shock. This is all the more startling when we learn that many of the leaders of the profession were consulted by Parkman and since 1875,

with no word of the explanation they should have known and of the cure they might have given. Many of them did not even keep any records or notes of the symptoms, diagnosis and treatment in his case. And yet more close comes the lesson when it is observed that despite the existence of hundreds of oculists at present capable of diagnosing and curing such diseases there are to-day in America at least a million such sufferers unrelieved, and in Europe many millions. In the presence of those who sneer at "exaggeration" and who kill by silence, before such wilful, not to say selfish ignoring, knowing the tons of "headache powders" sold by quack drug stores and even prescribed by medical men, viewing the vogue of the permitted and even encouraged "eyes-examined-free" criminal optician,—pondering upon the dignity of the "leading practitioner" and the "ophthalmic surgeon," who cannot bring himself to become "a spectacle peddler,"— one is constrained to echo Parkman's splendid indignation as to the pompous historical writer who is more concerned about himself and his profession than about prosaic truth. Once when upbraided for some accurate but "undignified" truth he broke out with, "Damn the dignity of history! Straws are often the best materials." The same splendid spirit should motive us. Let us cure our patients!

The following is the second autobiographic letter, now preserved by the Massachusetts Historical Society, and copied by the kindness of Miss Parkman. As it has never been printed I reproduce it herewith, because it presents his own view somewhat differently from the first letter, and as seen from a later time in life.

My dear Brimmer, — I once told you that I should give you some account of the circumstances under which my books were written. Here it is, with some preliminary pages to explain the rest. I am sorry there is so much of it:

Causes antedating my birth gave me constitutional liabilities to which I largely ascribe the mischief that ensued. As a child I was sensitive and restless, rarely ill, but never robust. At eight years I was sent to a farm belonging to my maternal grandfather on the outskirts of the extensive tract of wild and rough woodland now called Middlesex Fells. I walked twice a day to a school of high but undeserved reputation about a mile distant, in the town of Medford. Here I learned very little and spent the intervals of schooling more profitably in collecting eggs, insects and reptiles, trapping squirrels and woodchucks, and making persistent though rarely fortunate attempts to kill birds with arrows. After four years of this rustication I was brought back to Boston, when I was unhappily seized with a mania for experiments in chemistry involving a lonely, confined, unwholesome sort of life, baneful to body and mind. This lasted till the critical age of fifteen, when a complete change came over me — I renounced crucibles and retorts and took to books; read poetry and fancied for a while that I could write it; conceived literary ambitions, and, at the same time, began to despise a literary life and to become enamored of the backwoods. This new passion — which proved permanent — was no doubt traceable in part to fond recollections of the Middlesex Fells, as well as to one or two journeys which I was permitted to make into some of the wilder parts of New England. It soon got full possession of me, and mixed itself with all my literary aspirations. In this state of mind I went to college, where I divided my time about equally between books and active exercises, of which last I grew inordinately fond, and in which I was ambitious beyond measure to excel.

My favorite backwoods were always in my thoughts. At first I tried to persuade myself that I could woo this new mistress in verse; then I came down to fiction, and at last reached the sage though not flattering conclusion that if I wanted to build in her honor any monument that would stand, I must found on solid fact. Before the end of the sophomore year my various schemes had crystallized into a plan of writing the story of what was thus known as the "Old French War;" that is, the war that ended in the conquest of Canada; for here, as it seemed to me, the forest drama was more stirring and the forest stage more thronged with appropriate actors than in any other passage of our history. It was not till some years later that I enlarged the plan to include the whole course of the American conflict between France and England; or, in other words, the history of the American forest; for this was the light in which I regarded it. My theme fascinated me and I was haunted with wilderness images day and night.

From this time forward, two ideas possessed me. One was to paint the forest and its tenants in true and vivid colors; the other was to realize a certain ideal of manhood, a little medieval, but nevertheless good. Feeling that I fell far short of it, I proceeded in extreme dissatisfaction to apply heroic remedies. I held the creed that the more hard knocks a man gets, whether in mind or body, the better for him, provided always that he takes them without flinching; and as the means of forcing myself up to the required standard, I put my faith in persistent violence which I thought energy. I held that the true aim of life was not happiness but achievement; had profound respect for physical strength and hardihood when joined with corresponding qualities of character; took pleasure in any moderate hardship, scorned invalidism of all kinds, and was full of the notion, common enough with boys of a certain sort, that the body will always harden and toughen with exercise and exposure. I remember to have had a special aversion for the Rev. Dr. Channing, not for his heresies, but for his meager proportions, sedentary habits, environment of close air and female parishoners, and his preachments of the superiority of mind over matter; for, while I had no disposition to gainsay his proposition in the abstract, it was a cardinal point with me that while the mind remains a habitant of earth, it cannot dispense with a sound material basis, and that to neglect and decry the corporal part in the imagined interest of the spiritual is proof of a nature either emasculate or fanatical. For my own part, instead of neglecting, I fell to lashing and spurring it into vigor and prosperity.

Meanwhile I diligently pursued my literary scheme. While not exaggerating the importance of my subject, I felt that it had a peculiar life of its own of which I caught tantalizing glimpses, to me irresistibly attractive. I felt far from sure that I was equal to the task of rekindling it, calling out of the dust the soul and body of it and making it a breathing reality. I was like some smitten youth plagued with harrowing doubts as to whether he can win the mistress of his fancy. I tried to gauge my own faculties and was displeased with the result. Nevertheless I resolved that if my steed was not a thoroughbred I would at least get his best paces out of him, and I set myself to a strenuous course of training for the end in view. A prime condition of success was an unwearied delving into dusty books and papers, a kind of work which I detested; and I came to the agreeable yet correct conclusion that the time for this drudgery was not come; that my present business was, so to speak, to impregnate myself with my theme, fill my mind with impressions from real life, range the woods, mix with Indians and frontiersmen, visit the scenes of the events I meant to describe, and so bring myself as near as might be to the times with which I was to deal. Accordingly I spent all my summer vacations in the woods or in Canada, at the same time reading such books as I thought suited, in a general way, to help me towards my object. I pursued these lucubrations with a pernicious intensity, keeping my plans and purposes to myself, while passing among my companions as an outspoken fellow.

The danger into which I was drifting rose from the excessive stimulus applied to nerves which had too much stimulus of their own. I was not, however, at all nervous in the sense in which that term is commonly understood,

and I regarded nervous people with more piety than esteem. The mischief was working underground. If it had come to the surface the effects would probably have been less injurious. I flattered myself I was living wisely because I avoided the more usual excesses, but I fell into others quite as baneful, riding my hobbies with unintermitting vehemence and carrying bodily exercise to a point where it fatigues instead of strengthening. In short, I burned the candle at both ends.

The first hint that my method of life was not to prove a success occurred in my junior year, in the shape of a serious disturbance in the action of the heart, of which the immediate cause was too violent exercise in the gymnasium. I was thereupon ordered to Europe, where I spent the greater part of a year, never losing sight of my plans and learning much that helped to forward them. Returning in time to graduate with my class, I was confronted with the inevitable question, What next? The strong wish of my father that I should adopt one of the so-called regular professions, determined me to enter the Harvard Law School.

Here, while following the prescribed courses at a quiet pace, I entered in earnest on two other courses, one of general history, the other of Indian history and ethnology, and at the same time studied diligently the models of English style; which various pursuits were far from excluding the pleasures of society. In the way of preparation and preliminary to my principal undertaking, I now resolved to write the history of the Indian War under Pontiac, as offering peculiar opportunities for exhibiting forest life and Indian character; and to this end I began to collect materials by travel and correspondence. The labor was not slight, for the documents were widely scattered on both sides of the Atlantic; but at the beginning of 1846 the collection was nearly complete.

I had been conscious for some time of an overstimulated condition of the brain. While constantly reminding myself that the task before me was a long one, that haste was folly and that the slow way was the surer and better one, I felt myself spurred forward irresistibly. It was like a rider whose horse has got the bit between his teeth, and who, while seeing his danger, cannot stop. As the mischief gave no outward sign, nobody was aware of it but myself. At last, however, a weakness of the eyes, which was one of its symptoms, increased so fast that I was forced to work with the eyes of others. I now resolved to execute a scheme which I had long meditated. This was to visit the wild tribes of the far West, and live among them for a time, as a necessary part of training for my work. I hoped by exchanging books and documents for horse and rifle to gain three objects at once — health, use of sight and personal knowledge of savage life. The attempt did not prosper. I was attacked on the plains by a wasting and dangerous disorder,which had not ceased when I returned to the frontier five months later. In the interval I was for some weeks encamped with a roving band of Sioux at the Rocky Mountains, with one rough though not unfaithful attendant. It would have been suicidal to accept the part of an invalid, and I was sometimes all day in the saddle, when in civilized life complete rest would have been thought indispensable. I lived like my red companions, and sometimes joined them in their hunting, with the fatiguing necessity of being always armed and on the watch. To one often giddy with the exhaustion of disease, the strain on the system was great. After going back to civilization the malady gradually subsided after setting in action a train of other disorders which continued its work. In a year or more I was brought to a state of nervous prostration that debarred all mental effort, and was attended with a weakness of sight that for a time threatened blindness. Before reaching this pass I wrote the "Oregon Trail" by dictation. Complete repose, to me the most detestable of prescriptions, was enjoined upon me, and from intense activity I found myself doomed to helpless inaction. Such chance of success as was left lay in time, patience and a studied tranquility of spirit; and I felt, with extreme disgust, that there was nothing for it but to renounce past maxims and habits and embrace others precisely the opposite. An impulse seized me to return to the Rocky Mountains, try a hair of the dog that bit me, and settle squarely the question to be or not to be. It was the time of the Mexican War, and I well remember with what envious bitterness I looked at a colored print in a shop window, representing officers and men carrying a field battery into action at the battle of Buena Vista. I believe that I would willingly have borne any amount of bodily pain, provided only I could have bought with it the power of action.

After a while — as anything was better than idleness — I resolved on cautiously attempting to make use of the documents already collected for the "Conspiracy of Pontiac." They were read to me by friends and relatives at times when the brain was least rebellious, and I wrote without use of sight by means of a sort of literary gridiron, or frame of parallel wires, laid on the page to guide the hand. For some months the average rate of progress did not exceed three or four lines a day, and the chapters thus composed were afterwards rewritten. If, as I was told, brain work was poison, the dose was homeopathic and the effect was good, for within a year I could generally work, with the eyes of others, two hours or more a day, and in about three years the book was finished.

I then began to gather materials for the earlier volumes of the series of France and England in North America though, as I was prevented from traveling by an extreme sensitiveness of the retina which made sunlight insupportable, the task of collection seemed hopeless. I began, however, an extensive correspondence, and was flattering myself that I might succeed at last when I was attacked with an effusion of water on the knee which subsided in two or three months, then returned, kept me a prisoner for two years, and deprived me of necessary exercise for several years more. The consequence was that the devil which had been partially exorcised returned triumphant. The evil now centered in the head, producing cerebral symptoms of such a nature that, in 1853, the physician who attended me at the time, after cautious circumlocution, said in a low and solemn voice that his duty required him to warn me that death would probably follow within six months, and stood amazed at the smile of incredulity with which the announcement was received. I had known my enemy longer than he, and learned that its mission was not death but only torment. Five years later another physician — an eminent physiologist of Paris, where I then was — tried during the whole winter to discover the particular manifestations of the insanity which he was convinced must needs attend the symptoms he had observed, and told me at last what he had been about. "What conclusion have you reached?" I asked. "That I never knew a saner man in my life." "But," said I, "what is the chance that this brain of mine will ever get into working order again?" He shook his head and replied, "It is not impossible" — with which I was forced to content myself.

Between 1852 and 1860 this cerebral rebellion passed through great and seemingly capricious fluctuations. It had its ebbs and floods. Slight and sometimes imperceptible causes would produce an access which sometimes lasted with little respite for months. When it was in its milder moods I used the opportunity to collect material and prepare ground for future work, should work ever become practicable. When it was at its worst the condition was not enviable. I could neither listen to reading nor engage in conversation, even of the lightest. Sleep was difficult and was often banished entirely for one or two nights, during which the brain was apt to be in a state of abnormal activity, which had to be repressed at any cost, since thought produced the intensest torture. The effort required to keep the irritated organ quiet was so fatiguing that I occasionally rose and spent hours in the open air, where I found distraction and relief in watching the policemen and the tramps on the malls of Boston Common, at the risk of passing for a tramp myself. Towards the end of the night this cerebral excitation would seem to tire itself out, and gave place to a condition of weight and oppression much easier to bear.

Having been inclined to look with slight esteem on invalidism, the plight in which I found myself was mortifying; but I may fairly say that I never called on others to bear the burden of it, and always kept up a show of equanimity and good humor. The worst strain on these was when the Civil War broke out and I was doomed to sit an idle looker on.

After it became clear that literary work must be indef-

initely suspended, I found a substitute in horticulture; and am confident that I owe it in good measure to the kindly influence of that gracious pursuit that the demon in the brain was gradually soothed into comparative quiet. In 1861 I was able, with frequent interruptions, to take up my work again. At the same time there was such amendment as regards sight that I could bear the sunlight without blinking and read for several minutes at once without stopping to rest the eyes, though my chief dependence was still in those of others. In 1865 "The Pioneers" was finished, and the capacity of work both of brain and eye had much increased. "The Jesuits" was finished in 1867; "The Discovery of the Great West," in 1869; "The Old Régime," in 1874; and "Frontenac," in 1877. "Montcalm and Wolfe," which involved more labor, was not ready till 1884.

While engaged on these books I made many journeys in the United States and Canada in search of material, and went four times to Europe with a similar object. The task of exploring archives and collecting documents, to me repulsive at the best, was, under the circumstances, difficult, and would have been impossible but for the aid of competent assistants working under my direction.

Taking the last forty years as a whole, the capacity of literary work which during that time has fallen to my share has, I am confident, been considerably less than a fourth part of what it would have been under normal conditions. Whether the historical series in hand will ever be finished I do not know, but shall finish it if I can.

Yours faithfully,

F. PARKMAN.

JAMAICA PLAIN, 28 Oct., 1886.

Clinical Department.

REPORT OF CASES FROM THE SURGICAL SERVICE OF THE CHILDREN'S HOSPITAL.

BY DRS. H. L. BURRELL, H. W. CUSHING AND J. S. STONE.

Reported by Dr. W. C. Howe.

1. *Simple papilloma of abdominal wall;* 2, *scalp wound: concussion;* 3, *branchial cyst;* 4, *bullet wound of left chest;* 5, *abscess of abdominal parietes;* 6, *congenital deformity of hands and feet.*

SIMPLE PAPILLOMA OF ABDOMINAL WALL.

O. M., a boy of eleven years, admitted Feb. 5, 1903. Family history negative; previous history negative. At birth showed a minute verrucous growth on abdominal wall, which gradually grew to size of a pea. Four weeks ago it was irritated by the child's finger-nails, some bleeding occurred and it has since then increased in size (Fig. 1). Physical examination: Well developed and nourished. Marked glandular enlargement in neck, glands size of beans. No glands in axillæ; few in groin. Heart sounds regular, normal, no murmurs. Lungs show numerous wheezy râles, scattered throughout front and back; percussion normal. Abdomen negative. Upper and lower extremities normal. On abdominal wall, 2 inches below lower end of sternum, is a reddened area 1¾ inches long, 1½ inches wide. In the center of this area is a verrucous growth ¾ inch long, ½ inch wide, elevated ¼ inch. This growth is very vascular and bleeds easily; not painful. Operation; Dr. Cushing: The papilloma, with the surrounding skin at its base, was removed. The growth evidently did not extend below the skin. Slight bleeding. Wound closed with a subcutaneous catgut suture. Crêpe lisse dressing. Bandage. Sixth day: The wound was dressed and found closed by first intention. Linear cicatrix firmly healed. No bulging on cough. Tenth day discharged well. Pathological report from Dr. H. A. Christian stated that the growth was a simple papilloma with lymphoid and plasma cell infiltration. We are also indebted to Dr. Christian for the photomicrographs which follow (Fig. 2 and Fig. 3). This case is of interest in that it had the gross appearance of an epithelial carcinoma. It was a simple papilloma which had increased in size as the result of irritation.

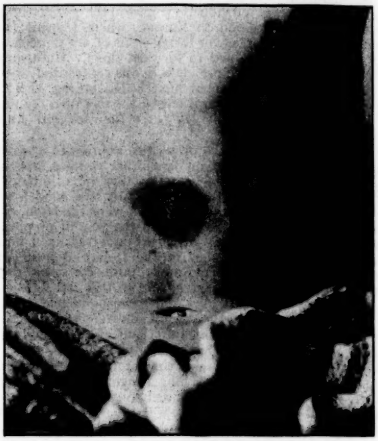


FIG. 1.—Simple papilloma of abdominal wall.

SCALP WOUND: CONCUSSION.

F. K., a boy of ten years, admitted March 30, 1903. Family history negative. Previous history: Diphtheria six years ago; following this there has been internal strabismus of right eye. There has also been paralysis of right arm since birth. Present illness: At 5.30 P.M. to-day, boy was struck on head with stone about size of a fist. At 6 P.M. was seen by a doctor, who cleaned up the wound, put in one suture and dusted wound with iodoform. While being dressed, the boy became drowsy and could be aroused only with difficulty. He was brought to the hospital at 9 P.M. Physical examination: Well developed and nourished. Pupils semi-dilated, left slightly larger than right, both react to light. Internal strabismus of right eye. Pulse regular, 76, good volume and tension, alike in the two wrists. Temperature 98.8°. On posterior aspect of head, at base of left parietal bone, is a contused wound 1 inch long. No depression or fracture can be made out. Boy not drowsy; is clear mentally. Heart, lungs and abdomen negative. Knee jerks normal. Right arm 21 inches, left arm 23 inches in length.

No muscular atrophy. The wound was cleaned with corrosive solution: corrosive dressing. On third day the wound was dressed; it was found to be clean. No symptoms. On sixth day the boy was up and about the ward. He showed no symptoms. On tenth day the patient was seen by Dr. W. N. Bullard, who made diagnosis of obstetrical paralysis, right arm. The patient was discharged well.

Injuries of this description in children are not uncommon, and unless one has seen the clinical picture of concussion, with pupils semi-dilated, one slightly larger than the other, internal strabismus of one eye, one might be led to localize a cerebral injury and operate. This patient, immediately following the injury, was mentally clear; but while the wound was being dressed stupor, a serious symptom, appeared. We have seen instances in which convulsions occurred which were so alarming as to cause the attending surgeon to operate.

BRANCHIAL CYST.

T. S., a girl of seven years admitted April 6, 1903. Family history and previous history negative. Present illness: When two years of age, the mother noticed a small lump, size of a pea, on left side of neck. This lump ruptured spontaneously and discharged. The patient was operated four years ago at another hospital by an incision and curetting. Two weeks ago the tumor reappeared and began to discharge a thin, purulent fluid. Physical examination: Situated on anterior aspect of neck, at the level of the thyroid cartilage and at the apex of the left submaxillary triangle, is a raised reddened area about the size of a pea, covered with a slight crust in the center. It is superficial and freely movable and not tender. It has a deep attachment running in toward the median line (Fig. 4).

April 13, operation, Dr. Burrell. An elliptical incision was made circumscribing this raised, reddened area and a dense, tubular sinus found which extended downward to the wing of the left thyroid cartilage. The sac was dissected free from the cartilage. In removing the tubular sac, the dissection opened the crico-thyroid membrane, which was sutured with fine silk. The dissection was difficult, and to remove the whole of the branchial cyst it was necessary to recognize clearly the difference between the cyst wall and the adjacent tissues. The separated muscular tissue and fascia were sutured with catgut and the skin was closed with silkworm-gut sutures. In a week's time the wound was united and the patient was discharged well. In removing a branchial cyst it is necessary to dissect out the continuity of the sac. Otherwise there will be a relapse from the secreting membrane that is left from the incomplete removal.



FIG. 4. — Branchial cyst, showing opening of sinus just to left of median line.

BULLET WOUND OF LEFT CHEST.

C. G., a boy ten years of age, admitted March 23, 1903. Family history and previous history negative. On March 20, 1903, the patient was one of a band of "white settlers" who were defending a town on Cape Cod from the attack of "Indians;" the Indians ranged in age from eight to twelve years; both the white and red men were armed for the most part with bows and arrows, but the Indians were fortunate in the possession of one 22 cal. revolver. The attacking party was rapidly being repulsed, until their solitary firearm, which throughout the conflict had been discharged over the heads of the whites, was turned against the patient, at a distance of about six feet. The bullet entered his left chest. The wound was dressed with gauze and corrosive sublimate; and was not probed by the attending physician. In the afternoon he had considerable pain in the left chest. No evidence of hemorrhage. Temperature 99.5. Pain on respiration. Morning of 21st, temperature normal, respiration 30, pulse 110; evening of 21st, temperature 100, pulse 120, respiration 32; 22d, temperature 101, pulse 120, respiration 35, wound looked well; evening of 22d, restless, temperature 102, pulse 124, respiration 40; 23d, temperature 101, pulse 124, respiration 36. Physical examination: Well developed and nourished. Expression anxious; tongue slightly coated; pupils equal and react. Slight glandular enlargement in left axilla and groin. Heart rapid, regular, no murmur. No friction rub. Heart's dulness extends to right, ¼ inch beyond the right border of sternum. Right

lung normal. Left lung shows good resonance in front, becoming dull in posterior axillary line, dulness over lower third of back. Just inside nipple on the left is a slight discoloration in fourth interspace; 1 inch inside and ½ inch below nipple is a circular wound in the skin, with surrounding yellowish discoloration (Fig. 5.). Wound ¼ inch



FIG. 5.

in diameter. Swelling and tenderness over pectoral muscle. No râles in lung. Slight discoloration in back over lower end of scapula. March 24, some pain in left chest. Physical signs in left lung have increased and lower third of back is flat, with bronchial breathing and increased voice sounds. March 25, seen by Dr. T. M. Rotch, who made diagnosis of pericarditis with effusion. Cardiac dulness now extends to line midway between right nipple and sternum. Slight friction rub over third space on left. Lung on left is now flat for lower two-thirds of back. March 27, respirations have dropped to 30. No râles in lung. Physical signs in heart and lungs the same. Small amount of bloody sputum to-day. March 28, heart's dulness ½ inch to right of strenum. Lung is not so flat. No râles. March 29, just below angle of left scapula, slough seen in back. Bullet not felt. April 1, pericardium evidently not so markedly stretched to right as before. April 5, temperature 99.5, respiration 30, child comfortable. Dulness in lower left back, several moist râles. Condition satisfactory. April 10, steady improvement since last note. April 13, child is improving in general condition and temperature is falling. Dulness in left back persists. April 17, this morning child developed swelling in region of right parotid. Some tenderness to touch and pain on opening mouth. Isolated on suspicion of epidemic parotitis. Dr. Rotch confirms diagnosis. April 22, temperature down. Throat not sore. Isolation stopped. April 27, last night temperature was up. No cause found. Up on go-cart in sun parlor. May 2 boy has been up and dressed about the ward. May 6, x-ray shows bullet about in middle of lung. May 7, physical examination: Heart sounds regular, not rapid, no murmurs. Relative dulness from anterior axillary line, third rib down to seventh rib. Area of dulness below and to right of angle of left scapula. Breathing somewhat diminished in left back in region of scapular angle. In left axilla, from fourth to seventh rib, extending to post-axillary line, is a region where breathing is almost entirely absent. Boy discharged relieved.

It is a fair presumption, from the situation of the wound externally, the situation of the bullet in the lung and the existence of pericarditis, that the apex of the heart muscle was perforated. A few years ago such injuries were assumed to be fatal, but to-day we know that punctured wounds of the heart may recover under suitable treatment. The immediate dangers are profuse, overwhelming hemorrhage, or a hemorrhage which trickles into the pericardial sac and thus gradually compresses the heart and stops its action. Life has been saved by operating and removing the clots which interfered with the action of the heart and suturing the heart muscle.[1]

ABSCESS OF ABDOMINAL PARIETES.

A. A., age six years, was admitted March 2, 1903. Family history and previous history negative. Present illness: Three weeks ago was struck with a club on right side of abdomen. Has not been in bed; has walked, but with considerable pain, leaning to one side. Bowels have moved with aid of castor oil. Sleep is prevented by pain; appetite very poor. Physical examination: Fairly developed and nourished. Looks sick. Lies by preference with thighs flexed. Pupils equal and react. No efflorescence. Throat normal. Linear scars behind each ear and on left side, in posterior triangle. Heart and lungs normal. Glands in each groin. Hyperextension of right hip limited. Limbs otherwise normal. Spine held somewhat stiff, especially to hyperextension. Child cannot be made to stoop or bend over while sitting. Walks rather guardedly, but not with the characteristic gait of Pott's disease. In right side of abdomen, just above McBurney's point, is a visible and somewhat indefinitely palpable tumor about two inches in diameter. No redness, increased surface temperature or fluctuation. Tumor moves with respiratory movement of abdominal wall and appears confined to abdominal parietes. Extremely sensitive. No general abdominal tenderness or distention. No evidence

[1] L. L. Hill: N. York Med. Rec., Dec. 15, 1900, p. 921. Case of C. H. Mastin: Transactions of American Surgical Association, vol. xiii, p. 273.

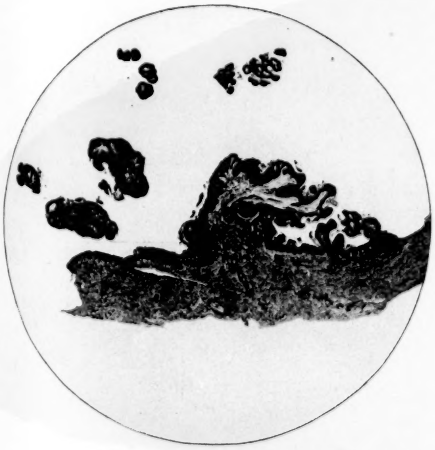


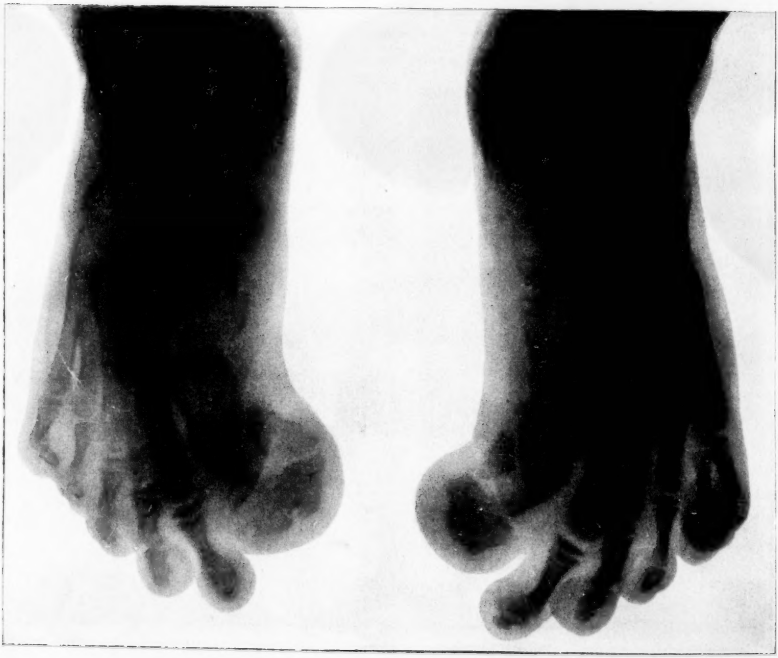
FIG. 2. — Photomicrograph of section of papilloma.



FIG. 3. — Photomicrograph of section of papilloma, showing that the growth is superficial, and does not involve the deeper layers.



FIG. 7. — Radiograph of hands.



Radiographs by Percy E. Brown, M.D.

FIG. 9.

of ascites. Right rectus more tense than left. Whole abdomen, except upon pressure over tender area, is flaccid. Operation, Dr. Cushing: Ether. Incision one inch long over abscess and small amount of pus evacuated. Abscess evidently between external and internal oblique. Irrigated with peroxide. Iodoform wick. Dressing. Good recovery from ether. One week later the wound was nearly healed, the granulations were healthy, slight discharge. Motions of hip apparently normal. Flexibility of lumbar spine normal. Lumbar spine slightly flattened. Discharged relieved. Blood examination, March 3: 21,400 leucocytes. Bacteriological record: Streptococcus pyogenes aureus. Apparently this was a hematoma, following the injury, which later suppurated. The case was sent to the hospital with the diagnosis of appendicitis with abscess.

CONGENITAL DEFORMITY OF HANDS AND FEET.

P. F., a boy of eleven years, admitted Dec. 5, 1902. Family history negative. Only child. Previous history: Normal labor, full term, measles. Present illness: Right hand operated on at another hospital when one year old. No other treatment. Since that time, so far as known, the child has had no trouble of any sort except the deformity. Physical examination: Peculiarly developed, strong, well nourished, good color. Tongue large, flat and fissured. Intelligence good. Ears outstanding. Forehead low and slightly retreating. Head, normal shape, rather small. Chest flattened at the sides. Costal cartilages prominent. Heart and lungs normal. Abdomen soft and full; normal. Penis small. Testicles in scrotum. Thighs large. Spine normal. Right arm normal. Right thumb, terminal phalanx, turned out at angle of 30°. Right little finger abnormally wide at base, as though there were an extra metacarpal. At base, scar of old operation for supernumerary finger. Left arm normal. Left thumb similar to right. On left hand the supernumerary finger beyond little finger, which seems to consist entirely of an extra metacarpal; between it and main body of hand is a web ½ inch wide, which runs up on outer side of little finger (Figs. 6 and 7). Movements of fingers not interfered with. Each foot presents six webbed, rudimentary toes, with imperfectly formed nails. Right foot apparently has five distinct metatarsals with corresponding phalanges and on inner side of these, an imperfectly formed metatarsal, with which articulate distally and internally irregular phalanges, three or four in number, forming a broad, flattened great toe. The left foot is similar in conformation. (Figs. 8 and 9). The great toe of



Fig. 6.

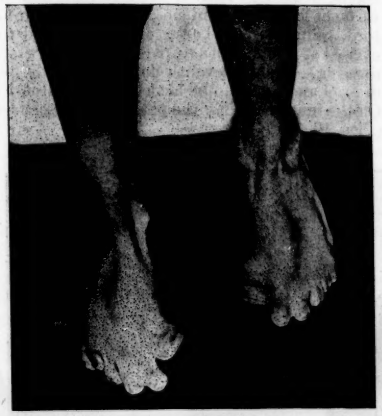


Fig. 8.



Fig. 10.

each foot is turned in at an angle of 30° with the axis of the foot. Operation, Dr. Burrell: Ether. *Left hand:* Incision starting at end of ulna and coming up around extra finger, forming an oval. The dissection was carried down to the joint of supernumerary finger and the finger was removed. Skin sutured with interrupted catgut sutures. Sterile dressing. *Feet:* Great toes removed. Incision at joint of toe and metatarsal up and around toe. Skin dissected back. Muscles cut and toes excised at joint. Skin sutured with catgut. Sterile dressing. On the seventh day the wounds were dressed and found to be healed by first intention. On the fourteenth day the patient was discharged (Figs. 10 and 11).



FIG. 11.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND W. D. HALL, M D., BOSTON.

(Concluded from No. 13, page 347.)

FUNCTIONAL OR HYSTERICAL AMBLYOPIA.

GUNN [6] divides this class of patients into idiopathic, usually occurring in women, sometimes in children, and traumatic, occurring probably to an equal degree in both sexes, but always in adults, according to his experience. He thinks that we do not understand the nature of the affections of the nervous system resulting in hysterical manifestations, although many forms admittedly have an element of simulation. In many cases a single central lesion will not account for all the symptoms. When such lesions actually exist it is not a pure functional disorder, but an obscure early manifestation of real organic disease. Many hysterical persons subsequently become affected with an ailment such as insular sclerosis, consequently these symptoms should be considered carefully. It may be assumed that in most of these cases there is a temporary, partial or complete loss of the power of conduction between the lower or middle visual centers and the highest conscious centers. Gunn has noticed in cases of supposed blindness in very young children that the child pays no special attention to moving objects, although ophthalmoscopically nothing appears to be wrong. He thinks the prognosis to be favorable in such cases, and considers it an instance of delayed visual consciousness, in which there may be retarded development of higher association fibers. He thinks that there may be some similarity between this class of cases and those which later in life are called "hysterical amblyopia," insomuch as in both the retinæ are perfect, the optic nerve seems to be perfectly able to transmit impressions, the tracts seem normal, the sight centers presumably are fit for work and actually are receiving impressions, and yet there is no consciousness of these impressions, or a consciousness lessened to the degree occasioning no response. In hysteria the association fibers have been normally developed and efficient, but from some unknown cause their functions seem to have been suspended. This loss of conducting power may be re-established by shock, suggestion, surprise or even a voluntary exertion, on the part of the patient, of his own will power. In hysteria a peculiarly suceptible nervous organization is to be considered. As regards the treatment, change of scene if it can be arranged; but if not, friends must be careful to avoid drawing attention to, or showing regard for, the symptoms. Nourishing diet, assafetida and faradism may be of value.

THIOSINAMINE.

Dr. George F. Suker [7] has carried on a series of experiments to determine the efficacy of this remedy as an absorbent of corneal opacities, cicatricial contraction of the lids, exudative chorioiditis, symblepharon, capsular opacities and cicatricial ectropion. It is an active alterative belonging to the same group as iodide of potash and mercury, and has been favorably mentioned as a resolvent of cicatricial tissue in other locations. Experiments made to determine whether it would prevent the maturing of cataracts were without results. The best mode of administration is in 3-gr. capsules once or twice a day, and after it has been used for five or six weeks, it is well to intermit for a week or ten days. It occasionally produces vertigo when first taken, which is an indication for diminishing the dose. Therapeutically it is a marked tonic, favors the absorption of exudates, transudates

[6] Ophthal. Rev., October, 1902.

[7] Journ. Amer. Med. Assoc. Aug. 9, 1902.

and clears corneal nebulæ, produces local reactions without general disturbances, reduces glandular enlargements, causes cicatricial tissue to become pliable. The writer has used it in 6 cases of exudative chorioiditis, with improvement in 4; in 10 cases of dense corneal opacities, with improvement in 6; in 8 cases of opacities less dense, with marked improvement in 4, moderate in 2; in 6 cases of plastic iritis, with benefit in 3; in 3 cases of capsular cataract, with not the slightest improvement. The author recommends it only as one of many drugs which have been used for similar purposes with possibility of improvement, but it should not be given in cases where there are cicatrices resulting from operation, when the scars are expected to act as supports.

OPHTHALMOL LINDEMANN.

Dr. Donath[8] believes this to be the best remedy for trachoma and other diseases of the eye. It is a carefully sterilized, oily product, showing the presence of iodide and traces of arachin acid. In the healthy eye it causes slight burning and redness of the conjunctiva, slight blepharospasm and photophobia, all of which disappear in a few minutes. In acute inflammatory conditions, after its use relief from the unpleasant symptoms is noticed. In those diseases characterized by secretion, these latter at first increase after its use and then rapidly diminish, and at the same time the swelling of the lids and chemosis of the bulb greatly subsides. Corneal ulcers are favorably affected through the formation of new blood vessels and reaction of corneal tissue. The opacities become certainly more transparent. In chronic inflammatory conditions, as, for instance, old trachoma with diffuse infiltration and hypertrophy, this drug at first causes an increase in the symptoms, but after the reaction the swelling subsides. Pannus is favorably affected by it, the ulcerative form especially, which at first shows an increase in circulation and new blood vessel formation, followed by resorption and clearing. The author prefers this drug to the nitrate of silver and sulphate of copper, as there is neither pain nor danger in its use. It may be said to favor resorption, increase the vitality of the tissues, act as an antiseptic by the lacrimation it produces and as a protective through its oily consistency.

SUBCONJUNCTIVAL INJECTIONS OF HETOL.

Dr. Lezenius[9] uses either a 1 or a 5% solution of hetol in water or salt solution. The solution must be clear, neutral or slightly alkaline; never acid. After two or three days the irritative symptoms of herpes cornea disappear. It relieves pain in a marked degree. The ulcers rapidly clear, and a cure takes place in ten days or even less. No constitutional treatment was used. In ulcers of the cornea, especially when sluggish in nature, this method of treatment is valuable, in that it starts up an acute process, which precedes healing. The duration of treatment of interstitial keratitis is very much shortened by the injection method. Of course atropine and internal medication should not be omitted. The injections do not seem to have much affect upon pannus. Iritis and choroiditis of the non-purulent variety, although not especially benefited, were not affected unfavorably, and possibly the duration was somewhat shortened. The same was noticed in diseases of the sclera. The action is probably due to the diffusion of the drug into the lymph vessels of the conjunctiva and thence into the corneal lymphatic spaces. Its principal action seemed to be exerted upon the cornea and its immediate neighborhood, the effect diminishing as the distance increased.

[8] Med. Chirurg. Centralbl., Feb. 13, 1903.
[9] Monatbl. f. Augenh., October, 1902.

VASOMOTOR DISTURBANCE OF THE EYE.

Lodge,[10] as a result of the examination of the eyes of patients in whom there were undoubted signs of vasomotor disturbance in other parts of the body, has noticed spasmodic contraction of the central artery of the retina and its branches, and marked dilatation of the retinal veins, with, in some cases, palpitation. Visual fields were greatly contracted in the temporal and lower temporal portions, but not so on the nasal side. Whenever an ophthalmoscopic examination has disclosed contracted arteries and dilated veins, it is apt to be the case that such appearances and changes in the visual fields accompany vasomotor disturbances elsewhere in the body, although they may be very slight and not considered important enough for treatment, as would be in severe cases of the definite Reynaud type. Such patients complain of frontal and parietal headaches; their eyes ache after use, even though ametropia may be properly corrected. These patients are generally neurotic, and have an anxious expression; sometimes there is proptosis and occasionally edema of lids. Dilated episcleral veins, myosis and ciliary spasms may be present. The thyroid may be enlarged, but, with the exception of the proptosis, there are no signs of exophthalmic goiter. The diagnosis of vasomotor disturbances of the eye is unmistakable if a subconjunctivitis comes and goes while the patient is under observation. Without corroborative symptoms the diagnosis of the chronic form is difficult. The author suggests that the so-called "hot eye" of Hutchinson, the subconjunctivitis of Graefe and the periodic transient episcleritis of Fuchs is really a vasomotor affection of the eye. "Suprarenal liquid" locally is advised, together with the internal administration of the gland substance.

THE PRESENT STATUS OF SUBCONJUNCTIVAL INJECTIONS.

Charles Stedman Bull, M.D., in a paper read this summer before the American Ophthalmological Society, after reviewing the literature of the subject of subconjunctival injections and showing thereby how contradictory has been

[10] Brit. Med. Journ., Nov. 1, 1902.

the evidence offered as to their real value, concludes that "the efficiency of these various solutions injected beneath the ocular conjunctiva cannot be ascribed to the increased local acceleration of the lymph currents and so-called leucocytosis nor to the antiseptic action of the remedies employed, since the presence of these processes cannot be demonstrated in the eye after such injections. The chief change seems to be in the composition of the aqueous humor. This is said to become much richer in albuminoids, due to the irritating action of the injected substances upon the blood vessels." As the protective substances in the blood are always in combination with the albuminoids of the blood, any increase of the serum albumen in the aqueous humor would coincide with an increase in protective substances. After an injection of sublimate or sodium chloride, the aqueous humor becomes markedly hemolytic. Although during the last three years he has treated various diseases of the eye by this method, making use of a number of different solutions, Dr. Bull has not been able to determine any important difference in the mode of action or their effect between salt solution and a solution of mercuric cyanide extolled by Darier, neither has he had the success claimed by Haitz in central choroiditis and vitreous opacities by use of solutions of mercuric cyanide, and he has found the solution to be very painful. Hetol injections were less painful, and seemed to influence favorably herpes, interstitial keratitis and acute uveitis. This good effect was noticed in superficial cases but not in the chronic, notably failing in scleritis. Persistent use in tubercular disease of the iris and choroid was apparently without the slightest effect.

BROMIDE OF METHYL-ATROPINE AS A MYDRIATIC.

Darier[11] recommends this new mydriatic, in that it lacks certain inconveniences of atropine and possesses certain good qualities. In the larger and repeated doses it is said to have the same action on the iris and ciliary muscle as the sulphate of atropine. When used in solutions of one per cent strength, the dilatation of the pupil only lasts about one day, while the cycloplegia lasts but a few hours. In solutions of one half of one per cent with one per cent of cocaine, mydriasis alone is produced.

ELECTRIC HEAT AND DIONIN IN RHEUMATIC AFFECTIONS OF THE EYE.

Maddox[12] has found it convenient, when applying artificial heat to the eye, to use a one-half or seven-tenths strength ampère current passed through very fine wire which has been wrapped in canton flannel. This current may be taken from an ordinary lighting wire and controlled by a transformer. He considers this form of dry heat to be especially indicated in rheumatic affections of the eye and certain forms of glaucoma. As a rule, he thinks dionin may be used when heat is indicated, but advises adrenalin when cold is more applicable.

[11] La Clinique Ophtalmologique, November, 1902.
[12] La Clinique Ophtalmologique, Dec. 10, 1902.

THE ORIGIN OF THE VITREOUS BODY IN VERTEBRATES.

Tornatola,[13] as a result of his investigations upon this subject, believes to have demonstrated the normal vitreous as being always composed of fibrillæ that have no granule; that pseudocells are not to be made out at the intersections of these fibrillæ; that when there exists a rosary-like arrangement of fibers it is of pathological origin; that there is no hyaloid membrane; that there is no true internal limiting membrane of the retina; that it comes from cells without nuclei, which form the base of the pars ciliaris retinæ and from elements which in the differentiated retina constitute neuroglia.

DIAGNOSIS OF INTRAVAGINAL HEMORRHAGE OF THE OPTIC NERVE WITH THE OPHTHALMOSCOPE.

Gonin[14] concludes his article as follows: A papillomacular haze with ischemia of the retinal arteries in a suddenly blind eye does not warrant this diagnosis. Profuse hemorrhages on the borders of the disk or in the vitreous do not necessarily signify an apoplexy of the sheath. They are in no way characteristic. A slight degree of papillary stasis is the only ophthalmoscopic appearance which the facts warrant considering an indication of retrobulbar effusion. The absence of all fundus changes does not exclude even an abundant hemorrhage into the sheath of the nerve. We are still ignorant of visual disturbances which are caused by hematoma of the nerve sheath, unless this hematoma is complicated by a more serious lesion, as, for example, fracture of the base or cerebral hemorrhage.

A PERIPATETIC EYE CLINIC.[15]

It is stated in the *Lancet* that Sir Ernest Cassel has given a large sum of money to the Egyptian government for the relief of ophthalmia in Egypt. It has been decided to send traveling dispensaries into the country for the relief of those who are unable to attend the already existing hospitals. There will be at first one of these dispensaries or ambulance hospitals, which will have a couple of tents with beds for patients who have to be operated upon, and for the treatment of the more serious cases. This will travel about from place to place under the direction of an ophthalmic surgeon. The system will be organized by a chief clinical assistant of the Royal Ophthalmic Hospital (Moorfields).

UNDER WATER FIVE MINUTES. — According to the *Medical News*, to settle a dispute, George Kistler, swimming instructor at the University of Pennsylvania, recently remained under water five minutes and five seconds without injury.

[13] Rev. Gen. d'Ophtal., March, 1903.
[14] Annal. d'Oculist, Feb., 1903.
[15] Med. Rec., July 11, 1903.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

PROCEEDINGS OF THE TWENTY-EIGHTH ANNUAL MEETING, HELD IN WASHINGTON, D. C., MAY 12, 13 AND 14, 1903.

Joseph E. Janvrin, M.D., of New York, President.

An address of welcome was delivered by Dr. I. S. Stone of Washington, D. C., which was responded to by the President.

There was a symposium on the subject of

WHAT SHALL BE THE TREATMENT IN CASES OF PREGNANCY COMPLICATED BY FIBROID TUMOR?

The first paper with this title was read by Dr. Henry C. Coe of New York City, who stated that fibroid tumors complicate pregnancy because they interfere with the normal development of the pregnant uterus; they cause distressing symptoms, or they jeopardize the life of the fetus or of the mother. Each case must be studied separately, and the decision as to the treatment will vary with the patient, the tumor, the experience and bias of the surgeon. He spoke of the influence of the tumor on pregnancy, and of pregnancy on the tumor — increased growth, degenerative changes, environment, etc. He mentioned three "semesters" of pregnancy:

(1) Up to the fourth month. (*a*) Empty the uterus in the case of large interstitial or broad ligament tumors, or where they are situated in the lower uterine segment; also in cases of impacted intrapelvic growths. Cases were cited in point. (*b*) Small tumors should be enucleated *per vaginam*, if possible, though pregnancy will usually be interrupted. Intrauterine polypi should be removed, if accessible. (*c*) Enucleation should be done by the abdominal route. Subperitoneal pedunculated growths should be removed. (*d*) Impacted growths should be liberated under anesthesia, when no adhesions are present, and they should be kept out of the pelvic cavity until they are kept out of the way by the growing fetus. The wishes of the patient should be followed so far as this can be done with safety.

(2) Fourth to seventh month. The location of the tumor is important, as well as its size and variety. Pain and pressure symptoms furnish indications for treatment. (*a*) Large interstitial growths. The uterus may be emptied, although the danger of hemorrhage from such a course is greater. (*b*) He advises enucleation by the abdominal route, and spoke of the propriety of removing multiple small tumors which do not encroach on the uterine cavity. (*c*) The patient should be kept under observation. The patient may go to full term and be delivered normally. (*d*) Impacted tumors, pressing on the bladder, bowel, ureter, may call for radical operation. (*e*) Twisted pedicle, degeneration of tumor, disease of the adnexa, peritonitis, etc., may require interference without reference to pregnancy.

(3.) After sixth month. Viability of the fetus should be obtained if the life of the mother is not actually jeopardized. Can the woman be delivered at term? Yes, (*a*) with subperitoneal growths, if they are not too large and favorably situated. (*b*) Small interstitial fibroids, if they are not in the lower uterine segment. (*c*) Polypi presenting at the os can be easily removed at any time. After the eighth month the Porro-Cæsarean operation, suprapubic amputation or hysterectomy should be performed, preferably by election, that is, before full term.

Conservatism should be practiced here, as in other gynecological operations, but not carried to extremes.

The author discussed the question of marriage and subsequent risks of pregnancy in women with fibroids. He said the time for conservative surgery is often before there is a chance of conception. In general, if a fibroid is to be regarded as a menace to life before pregnancy, the condition must be still more grave after conception occurs. Is it not the duty of the gynecologist to ward off this danger?

Dr. Joseph Taber Johnson of Washington, D. C., read a paper on

MYOMECTOMY OR HYSTERECTOMY.

He said the treatment depended on the size, variety and location of the tumor, as well as the size of the pregnancy. Myomectomy in favorable cases should be the operation of election. However, cases occasionally present themselves with such urgent symptoms as to require supravaginal hysterectomy as a life-saving operation. He described briefly successful operations of both varieties. He discussed the quesions of abdominal and pelvic operations during pregnancy; also the propriety of inducing premature labor, as well as the policy of trusting to the *vis medicatrix naturæ*.

Dr. George Tucker Harrison of New York followed with a paper on

PREGNANCY AND LABOR COMPLICATED BY MYOMATA.

No general rules can be laid down with reference to the treatment, as each case must be carefully studied in all its circumstances before recourse is had to operative intervention. The dangers of this complication of pregnancy as a cause of dystocia were formerly overestimated. The plan of treatment during pregnancy, as a rule, is an expectant one.

Dr. Edward Reynolds of Boston spoke of the treatment of large incarcerated fibroids at or near term in advance of the fetal head. He had seen ten such cases. No one of these tumors was smaller than the seventh-month fetal head. In each instance the woman was delivered either normally or by forceps.

Dr. J. Duncan Emmet of New York City said there is no question but that certain myomata must be removed either by myomectomy or by

the radical removal of the uterus, while there are other cases in which the tumors do not interfere with the course of pregnancy. He was glad one of the essayists had emphasized a preference for myomectomy rather than the removal of the uterus, for the reason that the latter is such a serious procedure in its after effects, etc.

DR. WM. R. PRYOR of New York City expressed himself in favor of conservatism in the treatment of fibroids associated with or complicating pregnancy. If the tumors are situated in the anterior wall of the uterus, and are very small, they would slide up over the pubes without much trouble. Even before the seventh month, while some of these tumors may seem to be an actual bar to delivery, they accommodate themselves by their softness to the situation. Subperitoneal fibroid tumors complicating pregnancy demand operation as a rule.

DR. HENRY D. FRY of Washington, D. C., in referring to Dr. Coe's paper, spoke of emptying the uterus, saying he thought the cases are rare where this procedure is called for. The treatment is either expectant or radical. Those tumors which indicate emptying the uterus are necessarily located in the lower uterine segment, and yet some of these occasionally rise in the pelvis and give very little or no trouble.

DR. WALTER P. MANTON of Detroit, Mich., looked upon cases of fibroid tumors complicating pregnancy as very rare. Personally, he has seen but six such cases out of approximately five or six thousand cases of labor in both private and hospital practice. In the majority of cases of interstitial submucous fibroids, abortion almost inevitably occurs between the third and fifth months.

DR. REUBEN PETERSON of Ann Arbor, Mich., spoke of a case on which he had operated. The tumor was located in the lower uterine segment, and was of the interstitial variety. He did a myomectomy, the woman went on to full term, and was delivered of a child.

DR. GEORGE J. ENGELMANN of Boston had twice seen the disappearance of fibroids following confinement.

The subject was further discussed by DRS. CHARLES M. GREEN of Boston, ARTHUR W. JOHNSTONE of Cincinnati, JAMES CLIFTON EDGAR of New York, and the discussion closed by the writers.

DR. GEORGE H. NOBLE of Atlanta, Ga., read a paper entitled

COMBINED BISECTION OF TUMORS AND UTERUS, WITH ENUCLEATION OF THE FORMER, IN ABDOMINAL HYSTERECTOMY FOR LARGE FIBROID TUMORS.

In case of large fibroid tumors in the body of the uterus, the author recommends bisecting the tumor, bisecting the uterus and then enucleating the bisected tumor. In intraligamentous tumors the uterus should be bisected, the capsule of the tumor brought out from the cavity of the uterus and the tumor enucleated from its capsule.

The advantages of this method are: Saving of time, prevention of hemorrhage, increased working space, easy manipulation, accessibility to the blood supply in the deep pelvis and freedom from liability of injury to the ureters and uterine arteries.

DR. NOBLE then discussed

THE ENUCLEATION OF INTRALIGAMENTOUS AND POSTPERITONEAL FIBROID TUMORS IN THE DEEP PELVIS.

He stated that he had received a reprint from Dr. Pryor, in which he, Pryor, anticipated him in the treatment of intraligamentous tumors or postperitoneal fibroids in the deep pelvis. As the principle is the same, and the difference is merely in technique, the essayist endorses it. Intraligamentous tumors are partially enucleated by penetrating their capsules from the cavity of the uterus after bisecting the organ. They should be turned out with the fingers and morcellation forceps, then drawn up and rotated outward as described. The portion of the tumor attached to the capsule everted the latter as it is drawn out of the abdominal incision, and often to such a surprising extent that it may be included in the ligature placed around the upper border of the broad ligament. In this way the capsule in some cases may be entirely removed, and in others only cut away, and if within the ligature of the pedicle, avoided the necessity of suturing the edges of the capsule. He said that Dr. Pryor did complete enucleation of the tumor and sutured the capsule, while he partially enucleated the tumor, utilizing its attached portion to pull up the capsule, transfix and tie off, in part or entire, with the ligature of the broad ligament.

DR. CHAUNCEY D. PALMER of Cincinnati, Ohio, discussed

THE RELATION AND CORRELATION OF GYNECOLOGICAL AND NERVOUS AFFECTIONS.

He spoke of this relationship from two standpoints: (1) What influence do female pelvic diseases have in the induction of nervous disorders? (2) What affections of the female pelvic organs arise from nervous derangements?

He ruled out any thought of the occurrence of any organic, so-called structural lesions of the nervous system as resulting, unless indirectly and quite remotely, from pelvic diseases. The morbid changes to which reference was made were hysteria, neurasthenia, neuralgia, chorea, epilepsy, hystero-epilepsy, certain paralyses, migraine, convulsions of certain kinds, including tetanus, also mental aberrations and vasomotor changes.

While many hysterical women have no anomaly of the sexual organs, a certain proportion of them have some imperfection in the development of their sexual apparatus, especially the uterus. Hence the justifiability of an oöphorectomy in some such cases. Should the sexual organs be diseased in hysterical women, one could not say that the hysteria was secondary.

Psychical causes are at work, which are more potent than the local disease.

Errors in diet, in general hygiene, in lack of rest and in various indulgences of the mind and body in girlhood lead to physical anomalies and give rise to abnormal mobilities of the nervous system. The functions of ovulation and menstruation play more than the ordinary rôle in the inauguration of nervous phenomena.

The author spoke of cases of insanity having been promptly relieved by gynecological operations. Likewise insanity had immediately followed operations. Such sequelæ were probably more common than after other operations.

In the treatment of women for the special diseases of their sex, there is too much of a tendency to place undue stress on real or supposed lesions of their reproductive organs. This is particularly true in reference to some so-called ovarian affections. Gynecology of to-day would not amount to much without an appropriate surgery, but indiscreet surgery, like over-medication, may be an abuse. Every theory in medicine must be the outgrowth of an extended experience. "Knowledge comes, but wisdom lingers."

(To be continued.)

Recent Literature.

Handatlas der Anatomie des Menschen. Mit Unterstützung von Wilhelm His, bearbeitet von Werner Spalteholz, Professor an der Universität Leipzig. Dritte Band, Zweite Theil. Leipzig: S. Hirzel. 1903.

The second and concluding part of the third volume is at length before us. It is a worthy conclusion of a very excellent work. We have praised the previous parts as they appeared successively and we are glad now to praise the work as a whole. The part just issued deals with the nervous system and the organs of sense. The figures of the brain are very good, and will be welcome to both student and practitioner. There are among them many of Held's more or less diagrammatic figures with distinctive coloring. All parts are satisfactory. We may venture to regret that there is not a representation of an actual section through the eyelid instead of a borrowed diagram. Among the illustrations of the ear is a very ingenious one of the base of the skull seen from above and treated as transparent, while a copy of a cast of the internal ear shows the labyrinth in position. It is impossible to criticise such a work in detail; and it is the less necessary because we can heartily recommend it.

Spectacles and Eyeglasses. By R. J. Phillips, M.D. Third edition, revised, with 52 illustrations. Philadelphia: P. Blakiston's Son & Co. 1902.

This little book of one hundred and nine pages is the third edition of a publication which appeared about ten years ago as the outcome of systematic instruction given by Dr. Phillips to successive classes at the Philadelphia Polyclinic. Its pages are well worth careful consideration by general practitioner and optician, as they contain information of much practical value to both. That which relates to bifocal lenses and prisms has been carefully rewritten. The presswork is of excellent quality, the illustrations frequent and to the point.

Handbook of Climatology. By Dr. Julius Hann, Professor of Cosmical Physics in the University of Vienna and Editor of the *Meteorologische Zeitschrift.* Part I: General Climatology. Translated with the author's permission from the second revised and enlarged German edition, with additional references and notes, by Robert De Courcy Ward, Assistant Professor of Climatology in Harvard University. New York: The Macmillan Company. 1903.

The increasing attention paid of late to the therapeutic use of climatic surroundings has disclosed even in the writings of many excellent clinicians a surprising lack not only of accurate knowledge, but of some of the simpler principles of meteorology and climatology. Mr. Ward, therefore, has done a most welcome service in placing within the reach of the large number of our profession to whom the reading of German works is sufficiently difficult to prevent free study, this standard work of Hann's upon climatology.

The volume itself needs little review. It is without doubt the standard treatise upon the subject at the present time. Its scientific fullness has not lifted it above the level of practical medical use, and many of the sections should be studied hard by those who wish to write of climatic conditions in new health resorts. The comments upon irregular variations of temperature and variability of the monthly means are especially pertinent.

Mr. Ward's additional references to recent literature are numerous and extensive, so that it is a surprise that in Chapter V no reference is made to the numerous phenological data collected and analyzed by Professor Herrera and Dr. Vergara Lope in their volume "La Vie sur les Hauts Plateaux."

Great praise is due Mr. Ward for his work. The translation, in marked contrast to many recent medical books, is into such smooth, clear English that the reader forgets the double authorship and wonders why this or that example is chosen from German or Austrian fields rather than from nearer home; and then, only, recalls that the book is a translation.

The book should be in the library of every physician interested in the subject, and will do much to fulfill the translator's hope and "lead to the extension and improvement of the teaching of scientific climatology in the United States."

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STOKES-ADAMS DISEASE.

THE subject of the so-called Stokes-Adams disease, which in recent years has excited a very considerable degree of interest, has received renewed attention at the hands of Dr. William Osler, who discusses the whole subject in a recent number of the *Lancet*. In 1895 Dr. Osler referred briefly to the condition in his lectures on angina pectoris, and later, in 1901, Dr. R. T. Edes reported a series of cases and discussed at length the literature of the subject. The condition is now likely to receive a definite place in textbooks of medicine.

Dr. Osler writes a concise and highly satisfactory account of the disease, giving his own very considerable personal experience. He defines the condition commonly known as Stokes-Adams disease as characterized by a profound disturbance in the automatic mechanism of the heart, a true bradycardia; by various nervous symptoms simulating often severe organic disease; and by secondary symptoms, among which may be mentioned Cheyne-Stokes breathing, cardiac asthma and vasomotor accompaniments of heart shock.

The condition which has been naturally much more adequately studied within the last years dates back to Adams' description in 1827, and it is rather remarkable that during the long intervening time relatively little interest has been excited on the subject either on the Continent or in England, although various authors allude to the symptom-complex, among whom may be mentioned Charcot. Dr. Osler discusses the conditions under which slow pulse may be met as physiological, neurotic, toxic and due to cardiac and cardio-vascular lesions, and lays stress upon the fact that Stokes-Adams disease is rather to be regarded as a syndrome than a disease in the proper acceptation of that term.

He finds that the cases may be arranged in three general categories: First, a post-febrile group; secondly, a neurotic group; and thirdly, an arterio-sclerotic group. His own experience has been confined almost wholly to the third group. He has had twelve cases, all in males, most of whom were above fifty years of age, and several above seventy-five. The histories of these cases are appended in systematic form, and serve to show the very great variety in symptomatology in cases which have a certain common resemblance. Vertigo, faintness, cardiac weakness, syncopal attacks, epileptiform attacks, discrepancy between heart and slow pulse rate, pseudo-apoplectic attacks, convulsions, anginal attacks, cardiac dyspnea, loss of consciousness, are some of the symptoms associated always with an extremely slow pulse, which these various cases present. It will be seen that many of these symptoms are on the part of the nervous system, and might most easily lead to grave errors in diagnosis.

Dr. Osler refers particularly to a case of this sort in which he felt confident that the patient was suffering from an apoplectic attack, which subsequently, however, proved to be an attack of syncope without grave significance. It occurs to us that not infrequently the unusual disturbances of consciousness in the form of attacks which are often perhaps rather loosely included under the general heading of epilepsy may find a possible explanation in this too much negelected symptom-complex of which we are speaking. Particularly is this true in the case of elderly persons who, without apparent cause, develop attacks simulating but frequently not identical with a typical epileptic seizure. The same may be said of the not infrequent apoplectiform attacks which one meets with in elderly men.

One lesson at least, therefore, which this careful résumé of Dr. Osler teaches is that we should give renewed attention to the cardio-vascular system in patients developing symptoms such as we have alluded to late in life. The combination of slow pulse with one or another of these nervous symptoms should at least lead to the suspicion of this Stokes-Adams syndrome, or one closely allied to it.

Dr. Osler finds the pathological anatomy of the condition altogether obscure, and, although arteriosclerosis is a very constant accompaniment of

many of the cases, he declines to commit himself as to the fundamental alterations producing the condition. The prognosis on the whole he finds bad, although life may be prolonged for many years with more or less serious periodic attacks. When the severer nervous symptoms have begun, however, there appears to be little prospect of complete relief, and sudden death is the usual outcome. With so uncertain a knowledge of the etiology and pathology of the condition, it is clear that treatment must usually be unavailing. There appears to be no remedy which will accelerate a permanently slow pulse, and the resort must be, particularly in elderly persons, to general hygiene and treatment of symptoms as they arise. In general, we hope that the clinical work which has recently been done upon this apparently important subject will conduce to an increase in our knowledge, and perhaps thereby to a clearer comprehension of the manifold and subtle disorders which attack the individual in his declining years.

THE WATER SUPPLY OF NEW YORK.

The expert commission appointed by the Mayor of New York has just sent in the preliminary report in regard to the water supply of the city, reference to which was recently made in the Journal. The estimate of $50,000,000 is declared by the commission to be sufficient to cover the completion of the necessary dams, reservoirs, aqueducts, tunnels and filters, and to acquire the necessary lands and rights sufficient for a daily supply of upward of 200,000,000 gallons. The summary of work to date has been submitted at the request of the commissioner of water supply, and includes several general conclusions, although the final conclusions on many details must depend upon surveys, estimates, etc., not yet completed. The main conclusion is that, notwithstanding the most favorable anticipations regarding the prevention of waste, the immediate construction of an additional supply is urgent. They find that it is possible to obtain such an adequate additional supply of excellent water from streams lying wholly within the state of New York. It is possible also to secure an additional supply larger than the present Croton and Bronx supply, plus the present Brooklyn supply, and capable of gradual development up to 500,000,000 gallons per day, from the following sources: (*a*) From certain of the eastern tributaries of the Hudson (the names of these are given). (*b*) From a portion of those just named in combination with the head waters of Esopus Creek on the easterly side of the Catskill Mountains. (*c*) By pumping and filtering water taken from the Hudson River, six miles or more above Poughkeepsie; the flow in time of drought to be reinforced from storage reservoirs in the Adirondacks, for the purpose of preventing the upflow of salt water to the intake.

The members are unanimous in a preference for the upland water to that of the Hudson, although the latter may be made pure and palatable by filtration, and should be regarded as in reserve for the more remote future. They recommend that the next aqueduct be built of a capacity of 500,000,000 per twenty-four hours, and also that the city should at once begin the construction of filters, both for the Croton water and for all other waters taken from surface streams. They consider that the surface streams which form so large a part of Brooklyn's present supply should either be filtered (as already in progress), taking the most polluted first, or that the ground water, being naturally filtered, should be taken, so far as practicable, by means of carefully planned wells or intercepting galleries of a design yet to be perfected. It is stated that the one great natural obstacle which limits the date of the early introduction of an additional supply from any and every adequate source within the state of New York is found in the long and deep tunnel which must be constructed for the aqueduct under the mountains and hills north and east of Peekskill. There are also some high dams needed in some of the projects, and it would appear that under the most prompt action, and with the best management, fully five years will be needed before the water of any up-country supply can be delivered in New York.

OPIUM TRADE IN THE PHILIPPINES.

The controversy going on in the Philippines over the bill proposing to place the whole opium trade in the hands of a single concessionaire has waxed so bitter that the whole matter has been indefinitely tabled and a committee appointed to investigate and report upon the results of the use of opium in other Oriental countries, and the methods in vogue in dealing with the opium traffic in those countries. The committee appointed will consist of Major E. C. Carter, Surgeon U. S. Army, the commissioner of health; the Reverend Dr. Brent, bishop of the Protestant Episcopal Church in the Philippines; and Commissioner

Lagarda, representing the Filipinos. The committee is directed to proceed to Japan, Formosa, Hong Kong and China, Burmah, the Straits Settlements and Java, for the purpose of making the necessary investigation, and is given four months in which to render its report. The committee left Manila early in August, and will be absent until the last of November, utilizing the last few weeks of the period allowed to prepare its report.

The Philippine Commission was apparently desirous of selling the opium concession to a syndicate, but this was opposed by a political alliance of the church people, represented by the Evangelical Alliance and the Chinese. The church people opposed the bill because they thought that opium should not be admitted to the islands, and the Chinese objected because they felt that under a concession it would be difficult to obtain an unlimited supply of opium at a price within reach of the humble coolie. The Filipinos, Spaniards, physicians, business men and Catholic clergy apparently took no interest in the matter. The commission desired to sell the concession, so as to realize a reasonable sum for the insular revenues, as opium can be so readily smuggled that probably only a small part of that which enters the islands pays the heavy custom duties demanded. Whatever may be the report of the Committee of Investigation, it is safe to say that the bill is dead and that the unholy alliance of American church people and Asiatic opium smokers — like the banding of the W. C. T. U. and saloonkeepers against the army canteen — will win. The church people can then sit down in the proud consciousness of having won an ethical victory, while the wily Celestial, as he smokes more smuggled opium at a less price and under less restriction, can smile to himself at the easy way the white man can be fooled when he looks at a practical subject through the glasses of sentiment. The fight was not without its amusing features. The would-be concessionaires claimed that opium smoking prolonged life, and was an absolute preventive and cure for most of the ills that flesh is heir to. The Evangelical Alliance made much of a petition presented against the bill by the Chinese Chamber of Commerce, "containing ten thousand Chinese signatures," which on examination proved to consist to a considerable extent of fictitious signatures and bits of Chinese humor. One signature was that of a Chinese general long since dead, and another purported to be that of a monkey famous in Chinese history.

EYESTRAIN.

IN this issue of the JOURNAL we complete the publication of an explanation of the ill-health of Francis Parkman. The author of this entertaining paper, Dr. George M. Gould, has recently come before the profession as an advocate of the important rôle of eyestrain in the production of various nervous disorders and in the consequent modification of character. That Dr. Gould carries his theory to an extreme, no one who has read his paper can for a moment doubt; that he is absolutely sincere in his own convictions is as little open to doubt; and it must also be said that relatively few will be able to follow him to the ultimate conclusions of his theory. Whether he be right or wrong as to the all-important rôle of eyestrain in the modification of character, and the indirect influence on genius, we may certainly admit that he has done distinct service in the attempt to analyze closely, even from the point of view of a somewhat overworked theory, the peculiarities of certain distinguished men. We are so apt to regard exceptional talent or unusual idiosyncrasy as an inevitable consequence of the lives of our ancestors that it is a positive relief to find a writer who is willing to trace with minuteness peculiarities and eccentricities to a rational or at least understandable physical source. Without endorsing Dr. Gould's extremely radical attitude toward the influence of eyestrain, we commend his method as scientific and conducive to a far juster appreciation of the influence of apparently minor events in the development of the man of genius. Anything tangible and definite as a basis of study is preferable to the vagaries and pseudo-science of some of the recent writers on genius.

MEDICAL NOTES.

BRITISH PHYSIQUE. — Owing to the widely-disseminated discussion regarding the physical deterioration of certain classes in England, a committee has been appointed by the Duke of Devonshire to make a preliminary inquiry into the facts. Until such an investigation is made it is certainly premature to draw conclusions.

MEDICAL SCHOOL BUILDINGS AT THE UNIVERSITY OF CHICAGO. — The University of Chicago has recently been negotiating for a large tract of land upon which it is rumored that medical school buildings are to be erected. The nucleus will be the Rush Medical College, supplemented

later by a memorial institute for infectious diseases and possibly by a hospital.

Probable Reappointment of Health Commissioner Reynolds of Chicago. — It seems altogether probable that Arthur R. Reynolds, present Health Commissioner of Chicago, whose energy in matters of health and hygiene has been constant and efficient, will be reappointed to his present office. Should this be the case, he will be publicly vindicated for the course he has pursued in administering his duties, which in the past has not been free at times from aspersions.

Chair of Experimental Pathology and Bacteriology. — It is announced that the Cornell University Medical College has made provision for a chair of experimental pathology and bacteriology, the work to be carried on at the Loomis Laboratory in New York. Dr. Bertram H. Buxton, assisted by Dr. Victor C. Vaughan, Jr., will be in charge of the work of this professorship.

Oral Hygiene in Medical Schools. — At a recent meeting of the National Dental Association it was "Resolved, that it is the sense of the 'National Dental Association' that each medical college in the United States should include in its curriculum a lectureship on 'Oral Hygiene, Prophylaxis and Dental Pathology.'"

The dental profession feels with the introduction of the teaching of oral hygiene in the public schools, which it is striving to accomplish, and the co-operation of medical men who have been specially instructed on this subject, that a great stride will have been made toward the prevention of caries of the teeth, not to mention many other good results to the general system, which would surely follow a better care of the oral cavity.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 30, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 36, scarlatina 26, typhoid fever 17, measles 20, smallpox 0.

Bequest to Hospital. — By the will of the late Richard W. Foster of Clinton, Mass., the Clinton Hospital Association receives the sum of $10,000.

New Harvard Medical School Buildings. — Work on the group of new buildings for the Harvard Medical School has begun.

Experimental Studies in Nutrition. — It is announced that the War Department will co-operate with Professor Chittenden of the Sheffield Scientific School at New Haven, in a physiological investigation of the minimum quantity of food required to maintain health and strength under ordinary conditions. For the purpose of the experiments twenty volunteers have been detailed from the army, who will live in New Haven during the progress of the investigation. The special object to be attained is a determination of the character of a physiologically economical diet.

A Case of Smallpox in Cambridge, Mass. — A case of smallpox is reported from Cambridge, Mass., the first which has appeared in that city for several months. No fear is entertained of a spread of the disease.

Evening Lectures on Nursing. — A course of training in emergency surgical work and nursing is to be given this winter at the Charlestown, Mass., evening high school. Lectures will also be given in advanced physiology.

NEW YORK.

New Building for St. Mary's Hospital. — The corner stone of the new building of St. Mary's Hospital in Jamaica, Borough of Queens, which when completed will accommodate about three hundred patients, was laid with religious ceremonies on Sept. 20. The present rather contracted quarters of the hospital, which is under the charge of the Little Sisters of the Order of St. Dominic, have proved inadequate for its growing work.

Sale of Hospital Property. — The property of the Memorial Hospital for Women and Children in Brooklyn has been sold at public auction for $96,500, which includes a mortgage of $50,000, and it is understood that the purchaser was the Jewish Hospital Society of Brooklyn, which will occupy the premises for its own work. The Memorial Hospital is one of the best-equipped institutions of its kind in the borough, but the managers were unable to support any longer the burden of the heavy mortgage, on which the holder brought foreclosure proceedings.

Department Store Pharmacy. — Through the serious consequences suffered by a lady who used one of the tablets for a nasal douche, it was recently ascertained that at one of the large New York department stores they were selling for Seiler's tablets, tablets of mercuric bichloride

for making antiseptic solutions. Each tablet had the word "poison" stamped on it, and the intelligent person who had put them in the bottles for sale had evidently "mixed the babies up." The label on the bottle purchased by the lady was marked Seiler's tablets, and contained directions for using these.

GIFT TO AMHERST PHYSICAL EDUCATION DEPARTMENT. — A daughter of the late Charles Pratt of Brooklyn has made a gift to the Department of Physical Education of Amherst College, by which the department is to receive an additional annual income of $1,500. Under the conditions of the gift a graduate of the college, complying with certain requirements, may by a year or more of work in the theory and practice of physical education, fit himself to become a teacher in this branch, while in the meanwhile assisting in the work of the department at Amherst. From members of the same family the college has during the last fifteen years received the present fine gymnasium and athletic field and various other generous gifts, includng the college "health-cottage," which is stated to combine sanitarium facilities with those of a hospital.

Miscellany.

COMPULSORY VACCINATION IN FRANCE.

THE lawmakers of France, after enduring for several years the irritating thrusts which had annually been published by the German health authorities, showing the great advantages enjoyed by the German cities as compared with those of France in the matter of immunity from smallpox, enacted a compulsory law in 1902, which in some of its provisions is preferable to that of Germany. This law became operative in February, 1903. By the terms of the act primary vaccination is required during the first year of life, and revaccination during the eleventh and the twenty-first years. The parents and guardians are held personally responsible for the execution of the provisions of the statute.

The French Academy of Medicine and the Consulting Committee of Public Hygiene were charged with the duty of recommending the methods of procedure for carrying out the provisions of this act.

The following is a digest of the recommendations as now published:[1]

(1) Vaccination to be exclusively performed with bovine lymph. Vaccination direct from the heifer to arm to be preferred in those cities where it is practicable, otherwise with glycerinated pulp.

(2) The preparation of lymph to be in charge of the government.

[1] Revue d'Hygiène, Feb. 20, 1903 p. 109.

Vaccine not to be used when over three months old.

Vaccinating physicians to keep registers, to be used, and all items of importance properly entered at each vaccination.

(3) The vaccinal service to be organized upon a uniform plan throughout the country.

(4) The Academy of Medicine which has for many years performed a worthy voluntary service, to have charge:

(*a*) Of the maintenance of investigations relating to the best vaccinal stocks, and the distribution of the same.

(*b*) Of the improvement of the modes of production, and of vaccination.

(*c*) Of the examination of the vaccine offered for sale.

The academy is to submit an annual report upon the vaccinal service, and upon the number of cases of smallpox occurring in the country.

(5) One or more *seances* are to be held annually in each commune for the purpose of affording gratuitous vaccination. Parents to be required to furnish information as to their children who are subject to vaccination and revaccination under the act.

(6) Vaccinators to be appointed by proper authority. Private physicians may be employed when preferred.

(7) Vaccinations not to be performed in a district where an infectious disease (other than smallpox) is prevailing, or threatens to become epidemic. Subjects for vaccination living in a house in which an infectious disease exists are to be vaccinated separately and not at the regular vaccinal *séance*.

(8) Lists of persons subject to vaccination to be made.

(9) These lists to contain dates and results of vaccination.

(10) Provision made for postponement on account of condition of health of subject.

(11) Investigations to be made when an unusual number of vaccinations prove unsuccessful.

(12) Provision made for repeated vaccinations in case of non-success.

(13) Provision made for inspection of issue of certificates.

(14) The lists of persons subject to vaccination comprise:

For primary vaccinations.— (*a*) All children born in the commune and entered upon the civil registration lists who are between three months and one year old on the day of the *séance*.

(*b*) Infants of the same age, born elsewhere but residing in the commune.

(*c*) Older children who for some reason have escaped vaccination.

(*d*) Those who have been vaccinated without success.

For the first revaccination.— The list comprises all children according to lists furnished by public and private school authorities who are enrolled in the schools and are eleven years old, and those of any ages who have neither submitted to vaccination nor revaccination.

Children who receive instruction at home are embraced in the same conditions.

For the second revaccination.—This list embraces all persons who have attained their twentieth year and are living in the commune.

(15) Provides for the publication of bulletins of information.

(16) Relates to the sanitary condition of the room or hall used for vaccination.

(17) Children to be brought for vaccination and kept afterward in a scrupulously clean condition.

(18) Children to be carefully examined, and their parents questioned as to their health before vaccination is performed.

(19) The operation to be considered a surgical one, and great care taken to avoid infection.

(20) Inspection to be made on the seventh day after vaccination. Provision for exceptions.

(21) Treats of the responsibility of parents, guardians and others.

(22) Reports to be made of vaccinations and of violations of the law.

(23) Foreigners and their children to be subject to the law.

THE MEDICAL PROFESSION IN AUSTRIA.

According to the *British Medical Journal* there appears to be one country in Europe which is not overstocked with doctors, namely, Austria-Hungary; nevertheless our Austrian brethren are not happy. At a congress recently held in Vienna it was stated that 20,000 communes of the Austro-Hungarian Empire, that is to say, 86% of the total number, are too poor to pay for a medical officer, and 30% — or taking Galicia alone 75% — of persons who die are buried without a medical certificate. The number of medical students is also steadily decreasing. Only 32% of the students of the Austrian universities belong to the medical faculty. The total number of medical students this year is 2,120, whereas in 1888–9 it was 5,277, showing a decrease of some 60% in about twelve years. The causes of the growing unpopularity of the medical profession is said to be the legislation which has made assurance against sickness compulsory among the working classes. About one-third of the population of Vienna is now so assured. It is further stated that, owing to the progress of hygiene, the number of cases of sickness has diminished one-half.

Correspondence.

A POSSIBLE USE FOR SPODUMENE IN MEDICAL DIAGNOSIS. — FURTHER PRECAUTIONS IN USING X-LIGHT IN DIAGNOSIS.

Whiteface, N. H., Sept. 28, 1903.

Mr. Editor: Recently there has been found in California a new variety of spodumene, which has been named Kunzite. It has been examined by Dr. Kunz and Professor Baskerville, and found to absorb energy when exposed to x-light, afterward continuing to radiate short ether waves for some minutes. If in a finely divided state, the mineral retains these properties. It will be of use in taking rapid x-light photographs, as the action of the fluorescent light on the photographic plate will continue, thus enabling the exposure to be much shorter than at present. This would be of great advantage, especially in instantaneous x-light photography of the heart.

In former notes attempts were made (by describing experiments on animals) to show that x-light was a dangerous agent, and to discover methods of diminishing the risk to the patient and physician. Some of these methods have already been sufficiently described. In the present note the matter is further considered. As x-light is a dangerous agent it should be allowed only to shine through the tissues under examination. The total amount striking these tissues during a given time should be the smallest which will allow an accurate diagnosis to be made. The time will come when physicians will realize that no examination of the chest is adequate unless the organs are seen by x-light. Then with these examinations advantage must be taken of the time during which a fluorescent screen gives light and of the persistence of vision to reduce the total amount of x-light required to make the diagnosis. The best way to do this is the one already recommended in earlier notes for prolonging the life of the tube used in such examinations — namely, sending the electric current in surges, each of very short duration, producing pulses of x-light that persist as fluorescent light on the screen and in the eyes, thus allowing intervals between the surges, during which, though the light appears continuous to the eye, no x-light is shining on the tissues.

Truly yours,

William Rollins.

RECORD OF MORTALITY

For the Week ending Saturday, Sept. 19, 1903.

Cities.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York	3,785,156	1,113	430	30.27	10.12	2.02	14.17	1.41
Chicago	1,885,000	469	153	35.25	6.54	2.11	16.23	2.43
Philadelphia	1,378,227	418	121	30.85	3.11	2.15	—	—
St. Louis	618,481	—	—	—	—	—	—	—
Baltimore	533,712	159	50	42.76	2.51	1.89	15.72	5.03
Cleveland	427,731	—	—	—	—	—	—	—
Buffalo	387,994	—	—	—	—	—	—	—
Pittsburg	351,745	103	39	32.36	5.82	1.94	10.67	7.76
Cincinnati	335,140	—	—	—	—	—	—	—
Milwaukee	315,307	—	—	—	—	—	—	—
Washington	295,103	—	—	—	—	—	—	—
Providence	191,230	80	25	35.00	11.25	6.25	18.75	—
Boston	605,163	215	76	30.70	9.30	1.39	16.27	2.32
Worcester	132,044	41	19	34.14	4.88	—	34.39	7.32
Fall River	115,549	44	22	43.16	4.54	2.27	27.26	2.27
Lowell	101,959	39	21	23.07	7.69	—	17.94	5.13
Cambridge	98,839	23	9	47.83	4.35	—	30.43	4.35
Lynn	79,497	22	6	9.09	—	4.54	4.54	—
Lawrence	69,766	18	13	61.10	—	—	44.44	5.55
Springfield	69,389	8	—	25.00	12.50	—	—	12.50
Somerville	68,110	24	10	41.66	8.33	8.33	12.50	8.33
New Bedford	67,198	28	17	42.85	7.14	7.14	25.00	3.57
Holyoke	49,236	—	—	—	—	—	—	—
Brockton	44,678	5	2	20.00	—	—	—	—
Haverhill	42,104	10	2	—	—	—	—	—
Newton	37,704	4	3	—	—	—	—	—
Salem	36,876	13	2	15.40	—	—	15.40	—
Malden	36,398	8	5	25.00	—	—	12.50	—
Chelsea	35,676	15	6	33.33	—	—	—	13.33
Fitchburg	35,069	8	2	25.00	—	—	—	—
Taunton	33,656	11	2	36.36	—	—	18.18	9.09
Everett	28,630	5	3	20.00	—	—	—	—
North Adams	27,862	9	4	33.33	—	—	33.33	—
Gloucester	26,121	—	—	—	—	—	—	—
Quincy	26,043	6	4	25.00	—	—	12.50	—
Waltham	25,198	4	1	50.00	—	—	25.00	—
Brookline	22,608	5	—	20.00	—	—	—	—
Pittsfield	22,589	3	—	—	20.00	—	—	—
Chicopee	21,031	5	1	20.00	—	—	—	—
Medford	20,982	2	2	—	—	—	—	—
Northampton	19,883	6	1	16.67	—	—	—	16.67
Beverly	15,302	5	1	20.00	—	20.00	—	—
Clinton	15,161	7	2	42.90	14.30	—	28.60	—
Leominster	14,806	—	—	—	—	—	—	—
Newburyport	14,478	6	2	16.67	—	—	16.67	—
Woburn	14,300	—	—	—	—	—	—	—
Hyde Park	14,175	—	—	—	—	—	—	—
Adams	13,745	4	—	25.00	25.00	—	—	—
Attleboro	13,677	—	—	—	—	—	—	—
Marlboro	13,609	6	3	16.67	—	—	—	—
Melrose	13,600	1	—	16.67	—	—	—	—
Westfield	13,418	3	—	—	33.33	—	—	—
Milford	13,129	—	—	—	—	—	—	—
Revere	12,722	7	3	33.33	—	—	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody	12,179	—	—	—	—	—	—	—
Gardner	11,929	2	1	100.00	—	—	50.00	—
Weymouth	11,844	7	2	57.20	28.60	—	28.60	—
Southbridge	11,268	—	—	—	—	—	—	—
Watertown	11,077	3	1	33.33	—	—	33.33	—
Plymouth	10,780	—	—	—	—	—	—	—

Deaths reported, 2,978; under five years of age, 1,066; principal infectious diseases (smallpox, measles, scarlet fever, cerebro-spinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 968, acute lung diseases 218, consumption 329, scarlet fever 18, whooping cough 21, cerebrospinal meningitis 9, smallpox 7, erysipelas 5, measles 7, typhoid fever 84, diarrheal diseases 432, diphtheria and croup 62.

From whooping cough, New York 6, Chicago 4, Philadelphia 6, Baltimore 1, Pittsburg 2, Boston 1, Chelsea 1. From erysipelas, New York 2, Philadelphia 1, Taunton 1, Clinton 1. From smallpox, Chicago 1, Philadelphia 1, Pittsburg 5. From scarlet fever, New York 6, Chicago 1, Philadelphia 6, Baltimore 3, Providence 1, New Bedford 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Sept. 5 the death-rate was 15.7. Deaths reported, 4,548; acute diseases of the respiratory organs (London) 123, whooping cough 61, diphtheria 51, measles 51, smallpox 7, scarlet fever 30.

The death-rate ranged from 3.3 in King's Norton to 25.2 in Middlesbrough; London 14.1, West Ham 14.8, Brighton 15.0, Portsmouth 16.8, Southampton 16.6, Plymouth 13.5, Bristol 12.2, Birmingham 17.8, Leicester 16.8, Nottingham 15.9, Bolton 18.0, Manchester 19.9, Salford 19.6, Bradford 15.6, Leeds 15.5, Hull 24.4, Newcastle-on-Tyne 20.6, Cardiff 14.2, Rhondda 13.9, Liverpool 21.9, Devonport 14.1, Bootle 22.3.

METEOROLOGICAL RECORD.

For the week ending Sept. 19, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. 13	30.14	74	86	61	66	84	75	S W	S W	8	14	C.	C.	0
M. 14	30.10	81	91	71	71	69	70	W	S W	8	8	C.	C.	0
T. 15	30.16	79	88	70	74	82	78	S W	S W	7	14	C.	C.	0
W. 16	30.08	74	80	67	80	80	80	S W	S E	6	24	F.	O.	T.
T. 17	29.84	76	81	70	84	93	88	S W	S W	9	15	O.	O.	.63
F. 18	30.08	63	70	56	58	46	52	W	N	14	8	O.	C.	T.
S. 19	30.42	56	62	50	57	66	62	N	S E	7	7	C.	C.	0
☞	30.12		80	64			72							.63

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING SEPT. 17, 1903.

GLENNAN, A.H., assistant surgeon-general. To proceed to Wilmington, Del., for special temporary duty, upon completion of which to rejoin station. Sept. 11, 1903.

VAUGHAN, G. T., assistant surgeon-general. Granted leave of absence for fifteen days from Sept. 18, 1903.

PECKHAM, C. T., surgeon. Granted leave of absence for one and one-half months, from Sept. 16, 1903.

GREENE, JOSEPH B., passed assistant surgeon. Granted leave of absence for one day, Sept. 16, 1903. Sept. 15, 1903.

VON EZDORF, R. H., passed assistant surgeon. To proceed to New Orleans, La., and wire arrival. To proceed to Laredo, Texas, for special duty. Sept. 16, 1903.

RICHARDSON, T. F., assistant surgeon. Relieved from duty at Tampico, Mexico, and directed to rejoin his station at New Orleans, and inspect en route Linares, Monterey and Victoria, Mexico, and Laredo and Eagle Pass, Texas. Sept. 14, 1903.

RICHARDSON, T. F., assistant surgeon. Bureau order Sept. 14 amended so that Assistant Surgeon Richardson will return direct to Laredo, Texas, and inspect service en route to New Orleans. Sept. 16, 1903.

BEAN, L. C., acting assistant surgeon. Granted leave of absence for four days from Sept. 15. Sept. 15, 1903.

GOLDSBOROUGH, B. W., acting assistant surgeon. Granted three weeks' leave of absence from Sept. 10. Sept. 10, 1903.

MARSH, W. H., acting assistant surgeon. Granted leave of absence for three days from Sept. 18, 1903. Sept. 16, 1903.

SMYTH, F.R., acting assistant surgeon. Granted two weeks' leave of absence from Sept. 10, 1903.

WALKLEY, W. S., acting assistant surgeon. Granted leave of absence Sept. 14 to 18, inclusive. Sept. 11, 1903.

ECHEMENDIA, D. M., acting assistant surgeon. Granted leave of absence for seven days from Aug. 27, 1903, on account of sickness. Sept. 9, 1903.

GOODMAN, F. S., pharmacist first class. Granted leave of absence five days from Sept. 5, 1903, under provisions of paragraph 210, Regulations P. H. and M. H. S.

RICHARDSON, S. W., pharmacist first class. Relieved from duty at Portland, Me., and directed to report at Bureau for temporary duty. Sept. 15, 1903.

MCBRIDE, CHARLES R., pharmacist third class. Relieved from duty at Stapleton, N. Y., and directed to proceed to Manila, P. I., and report to Passed Assistant Surgeon V. G. Heiser, Chief Quarantine Officer, Philippine Islands, for assignment to duty. Sept. 16, 1903.

BIERMAN, C. H., pharmacist third class. Directed to report at bureau for duty. Sept. 12, 1903.

VAN NESS, GEORGE I., pharmacist third class. Directed to proceed from McLean, Ill., to Stapleton, N. Y., and report to medical officer in command for duty and assignment to quarters. Sept. 12, 1903.

BOARDS CONVENED.

Board convened to meet at San Francisco, Cal., Sept. 25, 1903, for purpose of making physical examination of applicant for position in Revenue Cutter Service. Detail for Board: Passed Assistant Surgeon W. G. Stimpson, Chairman; Assistant Surgeon Carl Bemus, Recorder. Sept. 16, 1903.

Board convened to meet in Boston, Mass., Sept. 15, 1903, for the physical examination of First Lieut. George M. Daniels, Revenue Cutter Service. Detail for the Board: Surgeon R. M. Woodward, Chairman; Assistant Surgeon W. C. Rucker, Recorder.

APPOINTMENTS.

Clarence H. Bierman, pharmacist third class.
George I. Van Ness, Jr., pharmacist third class.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING SEPT. 26, 1903.

H. C. CURL, passed assistant surgeon. Detached from the "New York" and ordered to the "Boston."

E. R. STITT, surgeon. Detached from duty as a member and recorder of the Naval and Medical Examining Boards, Washington, D. C., and ordered to resume usual duties.

C. F. STOKES, surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Museum of Hygiene and Medical School, Washington, D. C.

A. STUART, assistant surgeon. Ordered to the Naval Hospital, Naval Home, Philadelphia, Pa.

J. L. TAYLOR, acting assistant surgeon. Appointed acting assistant surgeon from Sept. 16, 1903.

F. W. TYREE, acting assistant surgeon. Detached from the Naval Hospital, Port Royal, S. C., and ordered home to wait orders.

J. M. STEELE, surgeon. Ordered to the Naval Hospital, Port Royal, S. C.

SOCIETY NOTICE.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The semi-annual meeting of the society will be held at Hosack Hall, New York Academy of Medicine, 17 West 43d Street, on Oct. 13 and 14, 1903. The first afternoon session will be given to a symposium on the Röntgen Ray. The second afternoon session to a symposium on typhoid fever.

RECENT DEATHS.

GEORGE HAVEN, M.D., M.M.S.S., died in Boston, Sept. 27, 1903.

CALVIN SKINNER, M.D., a well-known physician, and one of the most prominent citizens in the northern part of the state, died at his home in Malone, Franklin County, N. Y., on Sept. 24. He was born in Royalton, Vt., May 29, 1818, and was graduated from the University of Vermont in 1836, and from Dartmouth Medical College in 1840. He was a close personal friend of the late Vice-President William A. Wheeler, and was a delegate to the Chicago Convention that nominated Abraham Lincoln for President. In the Civil War he served as surgeon of the 106th Regiment, New York Volunteers. In 1884 he took a prominent part in the founding of the Northern New York Institution for Deaf Mutes, and for ten years he was a trustee and medical officer of the institution.

BOOKS AND PAMPHLETS RECEIVED.

The Negro Problem from the Physician's Point of View. By W. T. English, A.M., M.D., of Pittsburg, Pa.

Circumcision and Flagellation among the Filipinos. By Lieut. Charles N. Barney, M.D., U. S. N. Reprint. 1903.

Traumatic Pneumonia. By W. T. English, A.M., M.D., of Pittsburg, Pa. Reprint. 1903.

Perichondritis of the Larynx, with Report of a Case. By Emil Mayer, M.D., of New York. Reprint. 1903.

The Cause and Specific Treatment of Hay Fever. By Emil Mayer, M.D., of New York. Reprint. 1903.

A Text-Book of Diseases of Women. By Barton Cooke Hirst, M.D. Illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

A System of Physiologic Therapeutics, a Practical Exposition of the Methods, other than Drug-giving, useful for the Prevention of Disease and in the Treatment of the Sick. Edited by Solomon Solis Cohen, A.M., M.D. Vol. VIII. Philadelphia: P. Blakiston's Son & Co. 1903.

King's College Hospital Reports; being the Annual Report of King's College Hospital and the Medical Department of King's College. Edited by Norman Dalton, M.D., F.R.C.P.; Albert Carless, M.S., F.R.C.S.; John Phillips, M.A., M.D., F.R.C.P.; W. D. Halliburton, M.D., F.R.S. Vol. VIII (Jan. 1—Dec. 31, 1901). London: Adlard & Son. 1903.

Rational Home Gymnastics. For the "Well" and the "Sick," with Health-points on Walking and Bicycling, and the use of Water and Massage. By Hartvig Nissen. With illustrations of Exercises for Women contributed by Baroness Rose Posse. Revised and Enlarged Edition. Boston: E. H. Bacon & Co. 1903.

Addresses.

MEMORIAL MEETING TO JOHN HOMANS, M.D.

ADDRESSES READ BEFORE THE BOSTON SOCIETY OF MEDICAL IMPROVEMENT, MARCH 30, 1903.

MAURICE H. RICHARDSON, M.D., BOSTON.

Dr. Homans' work in abdominal surgery began with his first ovariotomy in 1872. I had the good fortune to assist, though usually in a subordinate capacity, both at the Carney Hospital and at St. Margaret's. Many of the young men who received at his hands their earliest and best training in abdominal surgery have arrived at middle age in the practice of that great branch of general surgery. In their work at the present time one can detect the deep and lasting impression which Dr. Homans' teaching made upon them. Stimulated by his zeal and emulating his example, they have carried the pursuit of abdominal surgery from the narrow field of ovariotomy to the remotest areas of the abdomen. In all their work they have been aided by their early training more perhaps than they can fully realize, glad as they are to acknowledge their great indebtedness to Dr. Homans. In many respects the methods practiced when they were assistants are carried out to-day.

Take, for example, the operation of ovariotomy. In every respect, save in some minor details, the methods of Dr. Homans are still followed. His teachings as to diagnosis, as to indications for and against operation, as to technical details, after-treatment and prognosis, are as fresh in my mind, through constant application during the past fifteen or twenty years, as when they were spoken. I find myself repeating daily what he said in regard to this or that thing; what he did under certain conditions; what he said as to certain unfavorable symptoms; what made him think one kind of case unfavorable for operation, and another kind favorable; why one should always do this and never do that; why the neglect of a certain detail might be fatal; why he never had repeated a certain apparently promising procedure; why under certain disastrous complications he blamed himself first of all, and why he blamed himself alone.

One remark about the necessity of care in cutting across the uterine canal, lest the peritoneal cavity be dangerously infected, has influenced my technique in hysterectomy up to this very day. The rigid insistence upon the possibilities of contamination from the uterine cavity has, I fully believe, been the means of making the operation of hysterectomy one of practically no mortality.

His belief that ovarian tumors are frequently malignant when apparently benign has been justified time and again by deaths from disseminated abdominal cancer after the removal of a simple ovarian cyst. This disastrous sequel to a brilliantly successful ovariotomy has led me whenever possible to deliver ovarian tumors whole, lest the ovarian contents, possibly malignant, should infect the peritoneum. On the other hand, no matter how evil the tumor might look, he believed an effort should be made to remove it, unless the case was absolutely hopeless; for some of the tumors that are apparently malignant may prove benign, or at least their removal may result in a long period of health before recurrence.

In the through-and-through suture of the abdominal wall, Dr. Homans insisted upon the greatest care in passing the needle, lest there should be hemorrhage from the deep epigastric vessels; and he gave up entirely the cutting needle for the round and smooth. I have never sewed up an abdominal wound without calling to mind this precaution, especially after seeing a death from hemorrhage caused by the cutting of the deep epigastric artery by a glover's needle.

The extraordinary thing about his teaching and example is that as time goes by the wisdom of the former and the soundness of the latter have been demonstrated in hundreds and hundreds of cases. It is fitting, therefore, that those of us who were his assistants should recall some of the things which Dr. Homans, in the intimacy of our relations and in the privacy of his daily work, taught us; and to which, from his failure to recognize the weight and importance of his words, he never gave public utterance.

Dr. Homans' first work in abdominal surgery was confined chiefly to ovarian tumors. The investigation and removal of ovarian tumors naturally led him in certain instances to other tumors of the lower abdomen, through the impossibility of making accurate diagnoses. Questions therefore came before him regarding uterine tumors, tumors of the tubes, of the peritoneum, of the intestine, of the abdominal wall, of the retroperitoneal areas, — in a word, questions regarding all sorts of diseased conditions affecting the lower abdominal viscera. Through accidents of technique, through environment, through extension of ovarian and other diseases, — he was brought gradually to face lesions of great diversity and extent. As each new procedure was understood and mastered, his work began to include all sorts and conditions of disease throughout the abdominal cavity, until he himself realized — what after-comers are taught in the beginning — that he who opens the abdomen for some little, simple thing may suddenly and unexpectedly be confronted by those grave emergencies which tax the knowledge and skill of the most experienced.

Dr. Homans' first ovariotomy, performed in 1872, was fatal; the second, in 1873, the third and fourth, in 1874, and the fifth, in 1875, were all fatal. The first four were all serious and unpromising cases. Of the fifth he said in 1887, "I think I could easily cure a similar one now." The first four were adherent; the fifth was not.

His first successful ovariotomy was performed on Feb. 27, 1877. At this operation he used, for the first time, the carbolic spray. The next four patients recovered. Five consecutive operations, successful under antiseptic con-

ditions, following five consecutive unsuccessful operations performed without antiseptics, naturally made a profound and favorable impression upon Dr. Homans. It is no wonder that this great change was attributed entirely to the carbolic spray, for the cysts in these successful operations were all adherent and most of them multilocular. Indeed, in later years, when the spray was being generally given up, and when aseptic methods were supplanting the antiseptic, Dr. Homans was one of the last to abandon this cumbersome and now worse than useless detail. The regret with which he gave up the spray was characteristic of one who in other things was always faithful to a friend that had served him well.

The cases of ovariotomy rapidly increased in number: in 1878 there were 6; in 1879, 8; in 1880, 26; in 1881, 32; in 1882, 45. As his experience increased, his results became better and better. Up to 1887 there had been a run of 38 consecutive recoveries.

Though the results of operations gradually improve with experience in performing them, that improvement is too generally attributed entirely to increased experience and better technique — the most important factor being forgotten: that the early operations were regarded as justifiable only under urgent conditions. Dr. Homans' experience in the removal of ovarian tumors, as well as in that of uterine, shows the truth of this statement. Of his first seventeen ovariotomies, sixteen were of the adherent variety. What that word *adherent* meant, only those who saw the operations of those days can understand. The tumors were old, large and usually multilocular; they had been the seat of localized inflammations, ruptures, tappings. Their removal meant digging and tearing; escape of contents; a blood-oozing and slimy field; wounds of bladder and intestine — in a word, operations of the most difficult and formidable nature, which it required courage of the highest order to meet, especially after repeated failures. No wonder that the mortality was great; the wonder is rather that recoveries took place at all. The greatest element in the fatalities was the forbidding nature of the lesion itself, with its invariable accompaniment of a constitution enfeebled by long suffering.

So, too, in Dr. Homans' earlier hysterectomies — of which he had, up to 1887, twenty-seven; and of the treatment of which he modestly said, "My success has not been great;" but of which he said further, "I never do the operation unless the patient seems in danger of her life from hemorrhage, mechanical pressure or exhaustion, or else suffers such pain that life is not worth living." And yet of the 27 hysterectomies performed under these unfavorable conditions 17 recovered — 63 %. Twenty-seven hysterectomies at the present time are frequently performed without a death; and yet there may not be, and often is not, a single case among them in which there is either "hemorrhage, mechanical pressure, exhaustion or pain." The pioneers like John Homans led the way along the difficult and dangerous path by which uterine surgery has been brought to the brilliant possibilities of the present day.

The earliest operations of Dr. Homans which I remember seeing were performed at the Carney Hospital. The work was done in a high-studded room in the Chapel building — a room with a southern exposure, well ventilated and clean. Besides an etherizer there were two assistants and one or two Sisters. Sister Mary-Michael, who after operation was in charge of the patient, and in whom Dr. Homans had implicit confidence, was an efficient and faithful nurse. She shared in the enthusiasm of the times. To her untiring devotion in the after-care of his patients Dr. Homans attributed, in no small measure, the success of his earlier efforts.

No preparations of the patient were made until the time of operation, when the skin was washed with 1-20 carbolic acid solution, after the pubic hair had been shaved and the skin thoroughly scrubbed with soap and water. The instruments were immersed in 1-20 carbolic just before the operation. The same solution served for dipping the instruments prior to their use. The field was in a spray of 1-20 carbolic acid, produced by the elaborate and powerful sterilizers of that time. The sea sponges, then used exclusively, had been prepared by two or more days' immersion in 1-1000 corrosive sublimate. They were then kept in 1-20 carbolic until ready for use, when they were dried by being wrung out in an ordinary clothes wringer.

The first assistant stood opposite Dr. Homans; the second at his left hand. The first assistant did the direct assisting; the second, the heavy work of lifting the patient, compressing the abdomen, and the like. The operator stood on the right of the horizontal patient, the Trendelenburg position not being then in use. Incision, grasping of cyst, plunge of trocar, separation of adhesions, delivery of tumor — were rapidly accomplished. In non-adherent tumors the incision was about two inches in length. When necessary, the cut was carried upward; when extending above the umbilicus, it was always to the left of it. The pedicle was grasped with a clamp, — usually called "Mr. Dawson," — and tied with silk in a Staffordshire knot. The silk was passed through the pedicle upon a round needle, grasped by a peculiar holder. The escape of fluid was hastened by the second assistant, who squeezed the lateral and posterior walls of the abdomen. Who can forget the remarks made from time to time during the operation? If things went well they were abundant, cheery, humorous; if ill, not a word of any kind except quick, decisive, imperative words of command; or if the case was unfavorable, the outlook grave, the decision doubtful, the hopeful, "Let us make an effort!"

Before, during and after the operations we were treated to remarks which have proved of the greatest value under numerous similar conditions. How many times I have regretted that I have not followed the common-sense advice of

those days! I would almost say: "As many times as I have failed to follow that advice."

As to diagnosis, he would say: "Never fail to percuss the abdomen; always auscult when the tumor is large; never fail to consider the commonest tumor of women,— pregnancy,— no matter what the social life may have been, provided the patient is of child-bearing age; never tap an ovarian tumor through the abdominal wall; never use an aspirator in abdominal tumors; never fail carefully to examine both externally and internally when the patient is etherized, and before making your incision."

As to operative technique: "Look out for the bladder in making your incision, even if that incision is remote from the usual position of the bladder; be sure not to cut too boldly, lest you go through abdominal wall, tumor and all, or wound the intestine; separate adhesions carefully, lest you tear intestines; look out for ureters, especially if the tumor lies deep in the pelvis; beware of a slipping pedicle; use round needles in closing the abdomen, lest you cut the epigastric artery; be sure you have left no sponges or instruments in the abdominal cavity; do not burn your patient with hot water bottles."

Not long after Dr. Homans' work was well begun at the Carney Hospital, and when patients from all sides were flocking to that institution, he felt compelled to go elsewhere. The time and enthusiasm which Dr. Homans devoted to ovariotomy at the Carney Hospital were transferred to St. Margaret's. The Sisters of St. Margaret in Louisburg Square were asked to extend their charitable work to the care of the sick. Nos. 15 and 17 Louisburg Square were fitted up as a private hospital. Transferred to St. Margaret's, his untiring zeal soon made the name of that hospital known wherever his own was known. Other surgeons were allowed the privilege of treating their patients there; and St. Margaret's soon became the home of private surgery in Boston. The accommodations were gradually enlarged; more houses were transformed into hospitals, until now there are four separate establishments, all sprung from the small beginnings of the early eighties.

Though a private hospital, St. Margaret's received then, and has ever since, many poor patients, either at a very small rate or for nothing. Dr. Homans' enthusiasm for abdominal surgery, before he was appointed to the Massachusetts General Hospital, led him not only to take without fee all patients who could pay their board, but even to take some and pay their board himself!

Early in his abdominal work Dr. Homans was appointed surgeon to out-patients at the Massachusetts General Hospital. Not long after this he entered the house as visiting surgeon. At that time abdominal surgery was looked upon as a specialty. By long-established precedent the introduction of specialties into the hospital was not looked upon with favor. For this reason the introduction of abdominal surgery into a general hospital met with some opposition. It is hard to realize that within twenty years abdominal surgery was regarded at the Massachusetts General Hospital as a specialty — a hospital in which more than one thousand abdominal operations were performed in 1901 and 1,155 in 1902!

I do not know that there was ever any definite rule regarding the introduction of abdominal surgery into the Massachusetts General Hospital. My recollection of what Dr. Homans said at the time is that a friend on the staff advised him not to perform ovariotomies there — or, at least, not to bring abdominal surgery into undue prominence. Be that as it may, abdominal surgery had already gained in the surgical world an impetus before which all conservative objections to its introduction into the hospital vanished. What had been perhaps a branch of special knowledge on the part of Dr. Homans was soon transmitted to his colleagues upon the staff, all of whom, though they had not been his assistants, were quick to profit by his example and teaching in the amphitheater. Within a very few years, abdominal surgery, in regard to the introduction of which into the hospital so many fears had been expressed, was so fully recognized as a most important, if not the most important branch of general surgery, that the Bradley Ward and operating theater were especially constructed for abdominal and cerebral cases.

Though Dr. Homans regarded abdominal surgery as a branch of general surgery, he did much to debar from this dangerous field those whose environment was such that they could never become either skillful or experienced. He realized then, as all surgeons experienced in abdominal work cannot but realize now, that he who opens the abdomen must — by skill, education and experience — be prepared to meet the most formidable complications; and that he who without such qualifications opens it, but too often subjects his patient to unnecessary and formidable risks.

Dr. Homans continued to serve the Massachusetts General Hospital with his customary fire and devotion until he reached the age limit, in 1899. His retirement was the occasion for sincere regret on the part of staff and of trustees.

The words used by Dr. Homans to express himself during the excitement of operating hours clung to the operation of ovariotomy, and even entered into other operations. There were the *snaps* — small spring forceps which were applied to bleeding vessels of the abdominal wall, and which were prevented from slipping into the peritoneal cavity by means of thread and weight. There were the *sweeps* — sponges grasped with long-handled forceps to sweep out the blood from the depths of the pelvis. There were also *Mr. Spencer Wells* (trocar), as well as *Mr. Dawson* (clamp), *half-lengths* and *full-lengths* (hemostatic clamps). The abdominal wound was covered with gauze tightly bound down by a single wide strip of sticking plaster, after being closed by interrupted through-and-through sutures of

silk, *double-headers*, introduced from within, a separate needle for each side, the silk being threaded at each end. The abdominal dressing was tightly applied by means of a single long and broad swathe.

An early realization of the danger of leaving sponges and instruments in the abdominal cavity led to great precautions to prevent this disaster. Many methods were used. In the beginning it was the sole duty of a nurse to keep an account of all the sponges that were put in and all that were taken out — tally being kept of each act. Later, long tapes were used, with a weight attached; and, finally, the sponges were counted, both before and after the operation. Even this method was not absolutely safe; for mistakes might occur in counting, either before or after the operation. No greater disquietude could be caused than by the report of a missing sponge. Even after the abdomen had been closed, Dr. Homans would re-open at once if a sponge was unaccounted for. It was, of course, absolutely essential that the initial count be correct, and that no sponge be taken from the room. Dr. Homans found, as many of us have since under similar conditions, that the greatest danger of leaving sponges in the abdominal cavity existed when the count was correct. When a sponge was missed, and when after the most careful search it could not be found, it was pretty certain that the error was in the counting or in unnoticed abstraction from the room. In one instance the missing sponge was concealed in one of the numerous sacs of a multilocular cyst; in another it was found later in the day stuck on the bottom of an assistant's boot! Dr. Homans' insistence and extreme care against leaving sponges in the peritoneal cavity made a great impression upon me; and I have followed absolutely his methods in this respect.

Another point about which he was very insistent was the security of the ligature and precautions against its slipping. The pedicle was tightly compressed by the clamp; and in this sulcus a strong silk ligature was tightly drawn by means of the Staffordshire knot. The pedicle was then severed with the Paquelin cautery, which gave additional security against hemorrhage.

With reference to the diagnosis of ovarian tumors, or tumors simulating them, I recall many remarks of his, the truth of which I have had ample means of testing. Rapidly growing tumors are always indicative of malignancy; so, too, bloody serum. Malignancy is indicated by solid masses lying below the abdominal wall in an abdomen distended with fluid, — in which the tumor presents features the opposite of uterine balottement, — the finger receiving the impression of descending through fluid upon a submerged solid.

The prognosis after operation was illustrated by many examples which have been to me, in after years, the source of hope under distressing anxiety — as well as a source of anxiety in apparently hopeful conditions. Of the latter, I remember Dr. Homans' grave anxieties when vomiting was continuous and persistent, even if other signs were favorable; on the other hand, the insignificance of temperature and pulse, in his opinion, when abdominal conditions were favorable and there was no vomiting.

The results of Dr. Homans' operations constantly improved with increasing experience. Some of his early cases were extraordinary, even for those days. In two cases, both successful, the tumor weighed over a hundred pounds; in several the patients were of advanced years.

The disasters which occasionally occurred he attributed to faults of his own, when he could find them. Of 248 ovariotomies, performed up to 1887, 34 were fatal. Of these "about one-quarter, probably, are to be attributed to some error or carelessness of mine." Other fatalities were beyond his knowledge or his power of prevention. Whenever a death was owing to any preventable cause, that fact was always emphasized, both to his assistants privately and in his publications. In studying the latter, one is impressed by his unqualified self-condemnation. It is the single quality of unswerving love of the truth that has given Dr. Homans' words their impressive weight.

Another quality strongly emphasized in his conduct of abdominal cases was that of common sense. His diagnosis, treatment and prognosis were illustrative of this rare attribute. It led him to a proper estimation of the weight to be given to symptoms, to a wise selection of methods of operation and of after-care and to an accurate prognostication of coming events.

His skill in diagnosis of abdominal tumors was unrivalled in this community. Left to himself, without advice or prejudice, his early conception of a case was almost invariably accurate; and yet he was, he maintained, easily thrown off the track by the suggestions of others.

During the performance of operations he insisted that there should be no suggestions from any one. He had his operation planned beforehand, "often waking in the night and arranging in his mind its details;" and he objected to off-hand remarks which might interfere with his prearranged plans. Many of his followers, to the present day, sympathize fully with him in this respect. They learned from him how and when to hold their tongues. Not that Dr. Homans wished us to remain silent if some serious error of technique was imminent — quite the contrary. He wished, as we all do, to be warned if he was evidently mistaking an important for an unimportant structure. It was the interference with a plan well thought out by himself, — the interference made upon the spur of the moment by one who before that instant had given the matter no thought at all, — it was this kind of a suggestion that he objected to; and all operators will agree that he was right.

Dr. Homans was always pleased and encouraged by a long series of recoveries; and yet he would say when everything was going well, "A man must not be too much set up by an unbroken

series of successes. The first he knows, he will meet with one or two disasters which will make him think that he is not such an extraordinary fellow after all!"

Time does not permit me to mention, even briefly, the many reminiscences which Dr. Homans' name suggests. They are all interesting and all valuable. I find hardly a topic connected with abdominal surgery which some act or saying of his does not serve aptly to illustrate. Valuable as his later contributions have been to surgery, it is his earlier work — during the ten years following 1877 — which contributed most effectively to the wonderful advancement of abdominal surgery.

A. T. CABOT, M.D., BOSTON.

My close acquaintance with Dr. Homans began soon after my return from Europe in 1877. He asked me to act as his assistant in a case of ovariotomy, [1] and I worked with him in this capacity in something like one hundred operations.

One cannot stand opposite an operator and follow, as an assistant must, his every move in as many abdominal operations as that without getting a pretty clear insight into the workings of the operator's mind. Thus I came to know Dr. John Homans, the surgeon. His most striking and characteristic quality was his courage. This he showed not only by light-heartedly undertaking difficult feats of surgery, but also much more by the persistent pluck with which he put through a seemingly hopeless task in which he had met unexpected difficulties. One was constantly reminded of his training in the army, for he approached a surgical operation as if he were going into battle. He made his dispositions carefully beforehand, and then went ahead with no idea of retreat or failure.

In those early days of abdominal surgery when the proper technique was being learned by hard experience, the unforeseen was constantly happening, and the determination "to fight it out on that line if it took all summer" was a heroic trait, most valuable to a surgeon. This Dr. Homans possessed in fullest degree.

Another quality that he had —not so generally known, perhaps—was the spirit of investigation—the desire to learn the truth. Some of you may not know that for many years Dr. Homans interested himself in pathology, he made many autopsies, and, while not specially trained as a pathologist, he sought to learn all he could by his examinations. After he devoted himself to surgery, this investigating habit did not leave him. If a patient of his died, he insisted on knowing why, and was happy if he learned any fault in technique that he could rectify. It was this fearlessness in facing unfortunate results that enabled him to constantly improve his methods. I have often heard him say after a hard operation, "Well, we have done our best," and with that consciousness he was always ready to examine that best to see if he could not make it better.

[1] Dr. Homans' first successful laparotomy.

The man who is cheerful in the midst of difficulties gets better work on that account, both out of himself and out of those who are helping him. Dr. Homans' unfailing fund of humor often came to the rescue of an unfortunate or difficult situation. Every one who worked with him will remember some of his amusing sayings: "Hullo, what's that? Let's cut it and find out." The action followed the word, and the dissection proceeded after perhaps tying the vessel that had been divided. Thus jokingly, but always earnestly and with good sense and good judgment, he put through an enormous amount of surgical work and gained that experience which made him constantly a better and better surgeon.

His interest in his patient did not cease with the operation. He attended to the after care with untiring watchfulness and energy. In his zeal for having things efficiently done, he attended with great care to the details of the nursing of his patients. One visiting the private hospital at No. 15 Louisburg Square in the morning hours would often find him in his shirt sleeves hoisting a patient on the Crosby bed while the sheets were changed, or otherwise assisting in some delicate or laborious nursing maneuvre.

He once said to me that the best way to get patients was to take good care of those you had. He certainly carried out this plan faithfully, and achieved great success.

Such are some of the impressions of Dr. Homans gleaned beside the operating table. Another place where one saw a delightful side of his character was at the dining table. Here his charming *bonhomie*, assisted by a wit and humor that were all his own, made him the best of good company. That table was never dull at which he sat. His tales of men and things were good-humored, and always amusing. I am sorry for any of you who never heard him tell his army and navy experiences. Even if you had heard the tale before, it was sure to have some new turn of humor that made it fresh. One could read between the lines of his stories, and see how the same qualities with which I became acquainted in his surgery stood by him in the army, and made him a jovial comrade, always ready for fun or work.

I have dwelt at some length upon the two qualities which seemed to me to do the most for his surgical success. Another most marked quality was his energy, which went straight to its object, and was so much a part of him that it seemed perfectly natural for him to take a poor patient with ovarian tumor out of bed and take her in his own buggy to the Carney Hospital where he could operate upon her.

His frankness and outspokenness seemed to be almost beyond his control. If he could find any reason for criticism of one of his operations, he was the first to tell it to the patient. This transparent honesty was so winning a trait that it strengthened greatly the hold he had on his people. Such is the recollection I shall always keep of John Homans: courageous, a seeker after truth, squarely facing the situation, whatever it

was, and doing his best in it; constantly examining his works and frankly criticising himself when he could see possibility of correction; thus steadily advancing, cheerily, brightening every occasion and working steadily to the end.

GEORGE B. SHATTUCK, M.D., BOSTON.

Dr. Homans had begun an autobiography, but had only carried it through the first part of his army service. It is written in a simple, straightforward, humorous style, characteristic of the man. I am permitted to make some extracts from it which I feel sure will appeal to those who knew him and serve to give others an idea of his individuality.

He mentions having performed an autopsy about the year 1860, when in the medical school, on the body of a lady who died from the growth and enormous enlargement of two ovarian tumors. She had suffered terribly from pressure and dropsy for several years, and he was then impressed with the feeling that the death might have been avoided, and certainly the suffering might have been mitigated. It was this autopsy, he says, which turned his attention to ovariotomy; but the breaking out of the war put an end to all such thoughts for four years, and later the prejudices of the profession and the reluctance of women to submit to an operation the success of which had not been demonstrated postponed any action on his part many years longer.

Whilst still a house officer in the Massachusetts Hospital, in 1861 he passed the examinations for the medical service of the U. S. Navy, choosing this branch of the service "because he had been fond of yachting." He was ordered to join the *Aroostook* in February, 1862, and served on this vessel for six months. The extracts from Dr. Homans' autobiography here submitted begin at the time when he resigned from the navy to enter the army.

I had been much impressed by the care and method of the naval service, but a confinement on a small ship for six months, with no professional interests and with absolutely no surgery, had become very irksome and almost unendurable. I went to the Douglas Hospital, which was in charge of my friend Warren Webster, U. S. A. Surgeon Webster was a relation of Daniel Webster, the great orator and statesman, and was a very able man. In the Harvard Medical School he was one of two men, as I recalled, who could enumerate all the muscles of the back, with their origins and insertions. At the Douglas Hospital I was at home again, with a ward full of patients under my care and all the surgery that I could well handle. I remember doing an excision of the shoulder, an operation I had never seen done, and the result was very good.

The thought of going back to the *Aroostook* and being shut up again became more and more abhorrent and unendurable, and I determined to try hard to get my resignation accepted in the navy and to enter the regular army. In order to effect my purpose, I was directed by somebody to call on Mrs. Douglas, the widow of Senator Douglas of Illinois, and also on the family of Mr. Riggs, the banker. I think whoever advised me was putting up a joke on me. However, I called and spent an evening with Mr. Riggs and his daughters. I had never seen them before, had no letter of introduction and what they thought of me I do not know, but I would have gone through fire and water to get my resignation accepted, and certainly an evening spent with these agreeable young ladies was not a hardship.

I think I also called on Mrs. Douglas. She was a fine-looking, middle-aged woman of great ability and influence. I then pleaded with Assistant Secretary Fox to accept my resignation. I told him that I did not want to go home, I wanted to serve in the field with the army, where I should have some scope for my surgical abilities, and I finally said: "If it was your own son, would you not allow him to resign if he was going to enter the army at once?" My resignation was accepted, and I went at once before the Army Medical Board in Philadelphia. Surgeon Asch was president of the board, I think. I was in pretty poor shape as to health and strength. I had had chronic diarrhea for some months, and I required nearly a teaspoonful of laudanum in the morning to keep me going all day, and I had but little appetite.

The examination was very fair, except that in one instance the examiner did not know the answer to his own question. Dr. Asch asked me what the urine of serpents and birds was composed of. I told him "uric acid." He said it was urea. I told him that I had analyzed these secretions from serpents many times and that the urine was composed of uric acid, but he said I was mistaken. I replied that there could be no question about a matter of fact. I hope this was not set down against me. At this examination I formed the acquaintance of Dr. C. C. Lee, who entered the service at the same time, and our friendship lasted till his death in New York. He became one of the surgeons to the Woman's Hospital in New York.

I went home about the first of October, 1862, awaiting news in regard to the verdict of the medical board. I was taken with jaundice, and was in bed for some weeks. Dr. James Jackson attended me, and applied eighteen leeches along the border of my right costal cartilages. Whether it was the effect of the leeches or whether it was coincident with their application I know not, but the bile began to run within forty-eight hours and I was soon well, although weak. I received my appointment from Mr. Lincoln as an assistant surgeon in the U. S. Army (regular), and my orders to join the remainder of the Banks Expedition and to report for orders to Brig.-Gen. George L. Andrews at New York.

Here I was assigned to the duty of inspecting army transports and reporting upon how many troops could properly be carried on each vessel. I found that the U. S. immigrant inspection required that each immigrant should be allowed

one thousand square feet of air, consequently I measured the ships and reported the number of soldiers I thought could be taken on this plan. I found that where I recommended the transportation of about two hundred and fifty men the authorities had decided to take twelve hundred and fifty, and so it was throughout the fleet. I also suggested that if there was a fatal fire on a vessel there would not be boats enough to hold one-third of the number of soldiers, but I was told that the soldiers would have to be burned or drowned, for the government would never get the troops to the scene of action if my plans were followed. This last remark I thought very true and reasonable, and that some risk must be run if we were to transport large bodies of troops.

At length everything being ready, the expedition sailed. I went in the steamship *Illinois*, on board of which was the 49th Mass. Vol. Infantry, commanded by Col. Frank Bartlett, who had lost his leg in the trenches before Yorktown while an officer in the 20th Mass. Gen. George L. Andrews, commanding the whole of the "Remainder of the Banks Expedition," was also on board. I remember little about the voyage, except that the steamer had oscillating cylinder engines and had formerly been on the line between New York and the Isthmus, also that Bartlett used to keep our hearts in our mouths by walking up and down the deck unassisted when the ship was rolling. We had to lay off the bar at the mouth of the Mississippi because the water was low. I should say we remained several days, perhaps a week. When the water is high in the river, it is low on the bar, because the high water and swift current bring down great quantities of mud and sand, and pile it up on the bar.

The authorities had asked me in New York what would be the consequences of crowding the ships as they were doing, and I had answered: "The probable prevalence on the ships of ship-fever and dysentery;" and this proved to be the case, and many cases of these diseases were left at quarantine. On arriving at New Orleans, about the 10th of February, 1863, I reported at Major-General Banks' headquarters, and was assigned by Surgeon Richard H. Alexander, medical director, to the St. James Hospital. This was formerly the St. James Hotel, and was on Magazine Street. Surgeon William R. Brownell was in charge of the hospital, which contained about three hundred and fifty beds.

My duties at the St. James Hospital were very congenial. I had several wards under my care. The cases were mostly affections of the bowels or chills and fever, or malaria in some form, with debility, homesickness and feebleness from age, the sufferers having understated their age when enlisting. Almost all the members of a Rhode Island battery that came to the hospital were over sixty.

Sometime in the spring of 1863, Dr. Brownell was ordered to his regiment in the field and I was placed in charge of the hospital. I remember that Dr. J. V. C. Smith, formerly mayor of Boston, came to the hospital as a contract surgeon and an agent of the Christian Commission; he was quiet and attended to his duties; he did not practice surgery, but turned those cases over to me. There was not much surgery, as there was not much fighting until the two assaults on the works at Port Hudson on the 27th of May and the 14th of June. The wounded were mostly sent to Baton Rouge. I got a short leave of absence from my hospital and went to the army at Port Hudson. I went to General Auger's headquarters and was very kindly received by his staff, among whom were Major Cutting and others. They gave me a hammock to sleep in and took me into their mess. On the 27th of May a general assault was made on the rebel works. It was intended to be simultaneous, but it was not. Some of the troops assaulted at the early hour agreed upon and other assaulted later. They were beaten in detail. The colored troops assaulted, I was told, as well as the others, but all were repulsed, one after another. I was called by Dr. Winsor, surgeon of the 49th Mass. Infantry, to see Col. Frank Bartlett. As I have already mentioned, the colonel had suffered amputation of his right leg, I think, above the knee, at Yorktown in the late spring of 1862. He was the only mounted officer, I believe, in the assault. He could not walk over the felled trees and other obstructions with his artificial leg, and so he rode and jumped his pony. He was shot in the ankle and through the left wrist. He begged me to amputate the hand, but I declined and told him that I thought he would save his hand. When he insisted, I told him he must get some one else to amputate, as I would not. I attended him for a few days in Baton Rouge and wanted to take him to New Orleans with me, but I was not allowed to. Before I left him he said, "Now I shall lose my arm near the shoulder." I told him I did not think so.

I saw him again in the winter of 1865–66 in Rome, Italy. I inquired how his wrist was. He said it was first rate — "I drove a four-in-hand with it this morning." In Frank Palfrey's life of Bartlett it is said that the general's arm would have been amputated if the surgeon had not been too drunk to operate. This must have been after I left him at Baton Rouge. I think such stories are generally untrue, and I hope this one is. I remember seeing a surgeon trying to tie the common carotid going in behind the sterno-mastoid. I watched him for some time, but he had not found it when I left. I remember a soldier wounded in the vertex of the skull. He followed me round all day, pointing down at the top of his head with his forefinger. I found on examination that he had an abscess in the brain, and that the bullet was probably in his skull. I passed a knife into the brain and opened a large abscess, but did not find the bullet. I presume that he died, but as I left for New Orleans the next day, I did not learn his subsequent fate.

At New Orleans I found that a few wounded had arrived at the St. James Hospital during my absence, among others, Captain Russell of the 38th Mass. Infantry, who had been shot through the right leg, the bullet splintering the tibia at a

point about six inches below the knee. The wound was suppurating freely and the captain wanted the leg amputated, but I persuaded him to be patient, and he subsequently recovered perfectly, with a good limb. He subsequently entered the regular service after the war, and served till about 1898 or 99, when he was retired, more than thirty years after he was wounded.

Among other incidents, I remember that among several wounded Confederate prisoners was one boy of fifteen who had lost his leg. In a few days his mother came to see me and asked if I could employ her in any capacity without any pay so that she could be near her boy. She was very gentle and sensible, and very different from most of the Confederate women I had seen. I employed her as a nurse in the ward where her boy was lying, and she was one of the best nurses I had, and did her duty to the Yankee soldiers readily and with good sense and sympathy. The men all liked her, and when the boy had wholly recovered I gave him and her a pass and advised them to go out of the hospital and not to return. They were very grateful, and I never saw them again.

I remember I also had a visit one day from a lady who had the Confederate rosette in her bonnet: a red, white and red rose. She said that I had one of her servants who was working in the hospital. I asked her the woman's name and she said it was Rose. Now Rose was a mulatto woman and waited on my table, and one day she showed me her back, which was marked with pigment lines, the result of whipping with a lash; it was the only back of any one I ever saw who had been whipped. This lady asked me if I would give her her servant, and I replied, "Certainly." So I called Rose and asked her if she would return to her former mistress, and she replied with decision that she would not. The lady asked if I was not going to send a guard of soldiers to take Rose to her house. I told her, "No," that the soldiers were not here for that purpose, but that Rose could go if she pleased. The lady said of course she would not go unless she were made to, and she flounced out of my office in great indignation.

This lady came in again some time later and asked me if I would allow her to send some blankets to the rebel officers who were prisoners and who were confined in the custom house. I was at that time detailed, in addition to my other duties, to attend sick and wounded Confederate prisoners. She sent the blankets to the prison, and a few days later I saw them in the form of a long rope, made by tearing them in strips and tying them together. The officers descended at night by means of the rope to the ground, and were received in the arms of the guards, who had learned of the projected effort at escape. When the lady next called to see me, I asked her to go to the custom house to see her blankets. She said she never would have sent the blankets if she had supposed they would tear them up. I presume that the plan of escape was arranged with her, but of course I never knew.

I also learnt, while in charge of the St. James Hospital, the power of starvation as a taming and humbling process. Under Captain Beaumont on the *Aroostook*, the discipline of the ship was carried on by Lieutenant Spencer, the first lieutenant. His plan was to gag and trice up a refractory sailor. This was done by tying a wooden gag in his mouth, then tying his hands, which had been handcuffed behind his back, to a sufficiently long piece of rope. The end of this rope was then thrown over a boom and drawn tight until the prisoner stood on his tiptoes. The strain was great and the punishment was very severe. Another means of bringing the culprit to a proper state of mind was to shut him up in the coal bunker, or in the "brig." The latter was a closet with lattice work in the upper half of the door. The closet was just deep enough to receive the man standing up, but he could not lie down when the door was shut. Here he was imprisoned as long as was thought necessary to bring him to a proper state of mind. For my part I could not see that these punishments did any particular good, and the same men were punished over and over again. There were only a few bad fellows in the ship; many of the men were from Aroostook County, Me., who had seen the ship built and who had helped build her and had enlisted from patriotic motives.

When Captain Franklin relieved Captain Beaumont, he put a stop to these punishments and devised another. He had a part of the quarterdeck partitioned off by handspikes and canvas, and in this space the prisoner was shut up and fed on a few biscuits a day. I observed that this plan worked excellently. One Sunday evening I came home and was informed that two of the patients had been allowed to go out into the city and had returned very drunk, noisy and obstreperous. I told them to go with the sergeant-at-arms to the guard room, but they swore that they would cut my heart out and do all sorts of things. However, I got them shut up in the guard room and told the sergeant to give them three biscuits a day. The next morning I went to see them and told them to clean up the room. No, they wouldn't do it, they would see me damned first, etc. They said they wanted more food. I told them that when they had cleaned the room to my satisfaction, I would consider the question of food, but that for the present they could only have three biscuits a day.

On Wednesday they sent me word that the room was clean, but I told the sergeant that I would not go up till Saturday. On Saturday the room was as clean as a pin, you could have eaten off the floor anywhere, both the men were on their knees trying to kiss my hands, and they promised that they would behave perfectly and be civil and respectful. They were sailors, and I soon sent them to their ship.

I had watched another middle-aged man, who had been hobbling about the hospital, bent over and leaning on a stick, for about three months. He said he had the rheumatism in his back and that he could not stand up straight or do any duty. It seemed to me that the man had better

be cured and returned to duty, or discharged. There was no reason why the government should be paying for a man who was of no use. One morning I sent for the sergeant of the guard and told him to send me a strong, sensible man, who could use some judgment in a case for which I should detail him. He sent me a tall Yankee belonging to a New Hampshire regiment.

I instructed the man to take the afflicted one on to the veranda, to take away his stick and to order him to walk up and down the veranda — if he stopped to prod him with his bayonet. I explained to the patient that I was anxious for his good and wanted to see if I could not cure him. He agreed that it was a sensible plan. In about ten minutes the soldier reported that the patient was walking on the veranda, but was sweating profusely and seemed quite tired. I said, "Let him up for a few minutes and then keep him going according to your judgment till dinner time, and then take him out again an hour or so after dinner." In the afternoon the soldier and the patient reported. The sick man was walking perfectly well and the next day was returned to his regiment. I thought if the man was malingering he would soon repeat the process and get into another hospital. In the autumn of 1864, while surgeon-in-chief of the first division of the 19th Army Corps in the Shenandoah Valley in Virginia, I was hailed by a man on a mule, driving an army wagon. "God bless your honor, I hope you are well." "Very well," said I, "and who are you?" "I am the man you cured of rheumatism in New Orleans, God bless you."

Another case was a man who walked with two crutches and said he could not walk without them. I studied him for a long time and then ordered him sent to the convalescent camp and to walk all the way; it was about three miles. I sent two guards with him: one carried the crutches and I told them to give the man the crutches if they thought he could not get along without them, but to start him on the road without them, even if they had to carry him. They started, each of the men supporting one shoulder more or less. After about half a mile the man asked what the doctor had said about the crutches. "He said you were not to have them." "Very well," said the man, "then I will walk along;" and he walked perfectly well to the camp.

Another case was that of a boy who used to be seized with intense pain in his stomach quite frequently. Any doctor who saw him in one of these attacks would rush to the dispensary and get a dose of morphine and give it to him. Having had success with other cases, I thought I would try and cure this one. So I told him that the next time he had an attack it would be necessary to do an operation on him. He did not have an attack for some time. When he did, I got out my largest knives and made preparations before him for an operation, and told him that we could not give him ether or chloroform on account of the nature of the operation. He was much frightened and promised to go to his regiment and behave right for the future.

The Charity Hospital, the large public city hospital of New Orleans, was at that time presided over by Dr. Smith, who at this time tied the innominate artery for a subclavian aneurism. I saw the case. Dr. Smith ingeniously stopped a secondary hemorrhage by pouring shot into the wound. The man, a negro, recovered. Now there were certain taxes levied for the support of the hospital. One was a charge for nightly performances at the theaters and other places of amusement; another was a tax of five dollars on every bale of cotton exported. Cotton was then a dollar and ninety cents a pound, so that a bale of cotton was worth nearly a thousand dollars. I was directed by Gen. J. J. Reynolds, of the regular army, in command of the city of New Orleans, to find out where these moneys went. I started on my investigation and reported to General Reynolds that it seemed to me that some persons of high rank and prominence might be involved, and he told me that he was not likely to be supported in his action and that I had better cease my investigations. I ought to have said that what started General Reynolds in his inquiry was the fact that rations were being issued to the Charity Hospital for all the patients as if they were soldiers, and this seemed unnecessary if the taxes on the theaters and cotton had been honestly handed over to the hospital.

E. H. BRADFORD, M.D., BOSTON.

Sound traditions are of inestimable value to all communities and institutions in their gifts of dignity and stability, and it would appear that the medical profession of New England has reaped an especial benefit from the bequests of her strong medical families.

Dr. Holmes called to our notice the fact that for one hundred and fifty years there was a Dr. John Clarke, father and son, ready to administer to the medical needs of the community in its earliest days. The portrait of the original John Clarke in the hall of our library shows him a man of good sense. He was apparently skilled in the use of the formidable surgical implement at his hand. Rumor says that besides being a good physician he was a good judge and a breeder of horseflesh, probably a valuable accomplishment for the doctors of the time. From that time until now there have been a number of prominent families in our New England communities engaged in the practice of medicine, furnishing to each generation a man of mark. The names of many are almost household words among us — Warren, Jeffries, Holyoke, Jackson, Bigelow, Ware, Shattuck, Cheever, Bowditch. In equal rank among them stands the name of Homans, with, as was the case with some, the added dignity of what seems now a medical patent of nobility, a surgeon's commission in the army of the Revolution, signed by the commanding general, George Washington.

Why it is that the profession of medicine rather than of law or theology was transmitted in this way is perhaps an evidence of the stronger inter-

est of our calling among its votaries. It would have been thought that in early New England the hierarchy of the clergy would have been kept in families. It is for the student of history to explain this permanence of medical families, which have survived not merely in names to be respected, but in each generation a position of prominence has been won in our profession through an apparent inherited aptitude.

That there were three of the Homans family practicing medicine at the same time in Boston with success is a demonstration of the medical vitality of the family. To the youngest, Dr. John Homans, 2d, whose recent death cut off too soon a career of great usefulness, we owe in large measure our new medical library building. His father, Dr. Charles Homans, seemed (to one whose service as a colleague with him on the staff of the City Hospital was a great pleasure) a surgeon of unusual good sense, a practitioner of unfailing judgment and a rare gentleman. Dr. John Homans, the younger brother of Dr. Charles, was the last to die; he had inherited his father's name and added to its ancestral value, making it well known among surgeons throughout the land. It is a cause of gratification that the chain has not been broken and that in the rising generation there remains a young John Homans with a promise of professional achievement.

It is often said that it is difficult to measure exactly the worth of a man. The Napoleonic test, "What has he done?" is a practical one, but hardly just. A man's aims, his early attempts, his failures and how he bears them all are of value for the estimate of the height of his aspirations, the breadth of his scope, the depth of his convictions. A junior colleague on a surgical staff often has an opportunity to judge of his senior's worth more fairly than his patients or the general community. At the Carney Hospital at the beginning of his career of surgical prominence, Dr. John Homans showed to his juniors unusual characteristics. He was not a surgeon of the anatomical type who knew his anatomy with precision and was hampered or emboldened by the exactness of his knowledge; he was not a surgical student who was familiar with surgical literature or statistics; he lacked the judicial calmness of judgment of his brother. He was a man of a strong personality and energy, and possessed one of the traits which, as Emerson says, helps to make greatness — he reminded us of no one else; his mind was an original one and he followed his own lead. He had as a most valuable possession the splendid heart of a boy, which loves venture, is ready for an opportunity, enjoys achievement, meets defeat not only with serenity but with gayety, and is eager for another chance. He enjoyed large responsibilities; he liked surgery as the most attractive of endeavors, the most magnificent of games — the sport of splendid attempts. A true New Englander, he was a thorough self-critic, but this sharpened and never dulled his efforts.

With all the spirit of the adventurer, which was pronounced in him, he possessed a strong vein of conservatism. He was not a seeker after new things. He was slow in the acceptance of antisepsis in surgery and was slow in giving up the idea of the necessity of carbolic spray after he had adopted it. He was, in fact, with all his lack of conventionality, imbued to a degree with the spirit of what Dr. Holmes calls the New England Brahmin, who measures men and events by the standards which have met the approval of generations of worthies with lives centered about the Hub of the Universe, the dome of the Boston State House.

It was owing to this conservatism no less than his spirit of almost reckless venture that Dr. John Homans was able to accomplish in this community what he did. Time has done honor to the bold efforts of the pioneers in abdominal surgery and their successes, but it has laid the gentle hand of oblivion on the failures of that time, the ghastly failures of many of the early and injudicious followers in the movement. If the truth were told it would not seem strange that the conservative surgeons of the pre-antiseptic days hesitated in giving their sanction of approval to the rashness which was usually death dealing.

Owing to his conservative traditions, Dr. John Homans was not cast out among the outer barbarians in surgery, who injured their calling by their recklessness, and who seemed to the calmer members of the profession surgical buccaneers without skilled training, but armed with rash audacity, licensed thugs cajoling the public and boasting of their few successes, oblivious of their many failures. It is fortunate that this feature of surgical practice is now forgotten, only a few remembering its menace to the credit of our profession. It is to the lasting credit of Dr. John Homans, that while he was foremost in the movement which advanced surgery, he avoided this rash excess of operative zeal, and learned and taught the lesson of careful preparation and thoughtful undertaking.

Surgery was at that time in transition. Dr. Homans was brought up in a school which regarded a surgical procedure as a personal feat; the surgeon like a toreador matched his courage, energy and dexterity in an event. It was largely an attempt of the amphitheater in the mind of the surgeon, even if the spectators were few.

Dr. Homans lived to see surgery developed into a science of careful painstaking, often wearisome to the spectators, rarely spectacular, as beneficial as it is laborious.

Before Dr. Homans' time there were with us no professional surgeons. In our community there were general practitioners, who attended to surgery with skill and success, but they often gained their livelihood chiefly as general practitioners. Some even prided themselves on their reputation as family practitioners who avoided the narrowness of specialism. Dr. Homans himself for many years practiced general medicine until the public and his reputation forced him to make his practice purely surgical. It is largely through his efforts and to his example that our community has been led to demand special skill

in surgery, and to now give its support to so many surgeons of admirable skill.

Sir Frederick Treves in a recent address said that he regarded a community as fortunate where there was an unusual surgeon, but that that community was even more fortunate which contained a large number of well-trained and skillful surgeons.

It may be said to be in a degree to Dr. John Homans that Boston owes its great good surgical fortune.

ROBERT T. EDES, M.D., BOSTON.

I was invited to say something about Homans in the navy, but although we were indeed both in that branch of the service at the same time, one was in the Gulf and Mississippi, the other on the Atlantic coast, so that my acquaintance with him both before and after that time was a much more intimate one, and it is of this that I am very greatly obliged to you for giving me the opportunity to speak.

As medical students Homans and I were together a good deal, in anatomical study, both human and comparative, and in chemistry, at both of which subjects he worked with the zeal that characterized him throughout life. His quaint and shrewd remarks dwell in the recollection of his old companions.

It has been remarked by one of the gentlemen who preceded me that he was not a trained pathologist. Perhaps not in the present methods of training, — no one was, — but he was eager to grasp all the training there was to be had in those days, seizing every opportunity for autopsies and working diligently with the microscope. Dr. J. B. S. Jackson, the professor (in those days there were very few professors of pathological anatomy) was not indeed a lover of the microscope, but of what could be seen without it little escaped his eye, and there was no more enthusiastic teacher. Calvin Ellis was the volunteer leader as to anything approaching modern pathology, and of him Homans was a favorite pupil. We visited Spectacle Island and got specimens of anchylosed bones and intestinal calculi, which I dare say are still in the museum. When the Civil War began, the four internes of the Massachusetts General Hospital all entered the navy, prompted by what special inclination I do not know.

One of these four, " Billy " Gibson, a particular friend of Homans, died in the service, of yellow fever. The other two, Dr. Clarke, still in the navy, and Dr. Park of Groton, survive. The next I saw of him was in New Orleans, where I was with the vessels under my charge in the river, meeting him at the St. Charles Hotel, just after his arrival, and several times later; on one occasion making the rounds with him at his hospital, where it was pleasant to see the patients brighten under his cheerful address and humorous remarks. I heard that he had left the navy, for reasons very obvious to one who knew his vigor and ambition and who was aware of the tedium of attending a hundred healthy men; and that he had gone through the regular army examination, of which I heard several funny stories, of how he did not hesitate to express his independent opinions, although knowing that they were not likely to be officially acceptable.

One of these, but I cannot say whether he told me himself or whether it came more indirectly, was to the effect that when he was asked whether he would not, under certain conditions, shave the patient's head and paint it with nitric acid, replied, with characteristic independence and promptness, " By no means."

There seemed to me to be some connection between this story and a favorite expression of his in regard to a certain professor of very mild demeanor, " You might pour nitric acid on his head and he wouldn't say anything."

Later, to my great pleasure, I received a short visit from him, accompanied by the younger brother of a distinguished military family, on my vessel up the Red River, where he accompanied General Banks' army and did great service at Pleasant Hill. Of his army service, however, I knew nothing, except in this incidental way. Our acquaintance was renewed after the war was over, just before I left the service, by a visit at the Chelsea Hospital from him, accompanied by his nephew, then a small boy, but later the distinguished John Homans, 2d. As a consequence of this visit, we sailed for Hamburg in August, and with no very long delay reached Vienna, where we got to work as rapidly as possible.

There were there many Americans, some of whom, like ourselves, had been in the service, and who wanted either to carry on their general or special studies further, or who wished to supplement army practice by instruction in branches, such as obstetrics and gynecology, where the clinical instruction was in our colleges at that time practically *nil*.

Surgery, singularly enough, attracted neither of us much in Vienna. From the little I took occasion to observe I should suppose Homans, and perhaps many others, might have taught the Austrian surgeons at least as much as they would have learned. Such instruction as he obtained in that department of surgery in which he afterwards became so eminent, which was then in its early infancy, if not actually in embryo, he must have got later.

During these few months that we were together taking courses in various specialties, — obstetrical diagnosis clinically, with a few perfunctory lectures on gynecology under Meyerhofer; or pathology with Scheuthauer, with an occasional glance from the eye of the great Rokitansky; or Störck, the laryngologist, who had just risen to eminence by his treatment of a well-known singer, to whom he had restored not merely his normal voice, but a much superior first tenor; enlivened by excursions and visits on the Sundays and holidays, too numerous to suit our thirst for instruction, — Homans always displayed the same zeal for his profession, the

same determination to know all that would make him practically useful, and above all, the same independence of thought, the same utter candor and frankness, and yet all this without thinking of himself in the least as having arrived at the end or completeness of development.

Once he said to me, "I suppose by the time I get to be a pretty good doctor, I shall die." Fortunately not true, for so far as my less intimate acquaintance of later years would enable me to judge, the same absolute honesty distinguished him for long years beyond the time when he had become a "pretty good doctor," and when he was just as quick to confess the errors of judgment which may come to the wisest.

Original Articles.

THE OPERATIVE TREATMENT OF UMBILICAL HERNIA.

BY J. COLLINS WARREN, M.D., BOSTON.

UMBILICAL hernia is an affection to which a distinct class of individuals is liable. It is seen often in infancy and childhood, but the surgeon is rarely consulted for such cases, at least in private practice, for care and the use of a suitable belt usually suffices to keep the hernia within the abdominal cavity until, with the growth of the child, the opening in the abdominal wall disappears and a cure is effected.



FIG. 1. — Lipomatosis dolorosa and hernia.

The typical case which comes under the surgeon's care is that of a woman in middle or advanced life, of corpulent habit and the mother of a large family. The etiology of this form of hernia appears to consist partly in changes occurring in the abdominal wall during pregnancy, after which the parietes are left in a more or less relaxed condition, and partly in the accumulation of adipose tissue external to the true abdominal wall. The force of gravity and the pressure of clothing — notably the corset — gradually produce a pendulous fold which, in extreme cases, results in an apronlike mass of integument, which covers the genitals. This is always well marked in cases of diffuse lipomatosis, and is well shown in Fig. I (Case XIII), a male, in whom we have a double fold, the second covering completely the genitalia. The umbilicus is composed of cicatricial tissue, uniting the skin of the abdominal wall to the peritoneum and the fetal remains, which have become intimately associated with it. As the adipose tissue accumulates, this cicatricial tissue is placed upon the stretch and drags a funnel-shaped fold of peritoneum through the true abdominal wall. In this way the old congenital tract is gradually re-opened and dilated, and forms the ring of the hernial tumor, which is now found in the upper part of the pendulous fold of adipose tissue. The contents of the hernia are in the early stages invariably omentum. This readily becomes adherent, and at each adherent point the lobule of omentum forms a pouch for itself, so that in large and old hernias the sac is honeycombed with pouches containing separate lobes of the omentum. When the hernia is well developed, it is liable to occasional inflammation, and the adhesions of the omentum become partly intra-abdominal. This gives rise to frequent attacks of pain radiating over the abdominal cavity and causing more or less invalidism. An escape of a knuckle of intestine may give rise to sharper attacks of colicky pain, or even to strangulation (Case XII). In a case seen by me with the late Dr. Foster of Charlestown many years ago, there was gangrene of over twelve inches of intestine, with spontaneous recovery.

Although the mother of the present Princess of Wales was said to have died of a strangulated umbilical hernia, wealthy patients as a rule get along fairly well with a suitable truss; but, inasmuch as the affection prevails chiefly among elderly and obese subjects, it is only by the aid of skilled assistance that an apparatus can be adjusted so as to guarantee a fair degree of security (Case XIV). Patients are thus able to lead a much more comfortable existence, but the danger of a strangulation is always present.

Modern experience shows that obesity and even the glycosuria which frequently accompanies it is not a contraindication to operation, and improvement of surgical technique is always bringing about better results.

This form of hernia has generally been considered by surgeons as more liable to relapse than inguinal or femoral hernia, and with truth; but the percentage of recurrences is constantly growing smaller. This does not seem to me to be due to the invention of new methods of closing the neck of the sac, as has been the object of many recently described operations, but rather to attention to an accurate suture of the different layers in a manner that will bring them into close contact without too much tension.

The hernial sac should be exposed by two slightly curved incisions on the median line, which should meet and blend above and below into an incision sufficiently long to expose the outer walls of the sac as far as the neck of the sac and the surrounding aponeurosis. The sac should then be opened and the contents freed from adhesions and returned into the abdominal cavity. If the omentum is much matted together it had better be excised at a point below the portion which usually occupies the sac. The sac itself should then be carefully excised, care being taken to secure such vessels as may be divided. The shape of the opening in the abdominal wall is now obvious, and is found to represent an oval with the long diameter lying at right angles to the linea alba.

The peritoneum should, if possible, be separated from the fascia and sutured with fine sutures. The edges of the hernial ring consist of the tendinous raphé formed by the blending of the aponeuroses of the abdominal muscles. The accurate coaptation of these edges is of the greatest importance. The anatomical closure of this opening would apparently be effected by bringing the right and left edges together, but this cannot be done without great tension in the center of the line of suture, making a wound with depressed and tense center and raised and relaxed ends. The vertical diameter of this opening is always the shorter of the two, and if the lower and upper margins of the ring are brought together by forceps they can easily be held in that position without exercise of any appreciable degree of force. The parts seem to fall naturally together if the opening is closed transversely. Indeed, lateral strain closes this opening in the linea alba, while vertical strain tends to open it. The material used for suturing the peritoneum is fine silk (No. 8). It is not necessary to select the finest grades, such as are used for intestinal sutures, for this purpose. A No. 12 silk is the size used for suturing the aponeurosis. Enough tissue of this layer should be taken up to hold the suture securely and prevent retraction of the edges of the ring. It does not seem to me necessary to use quilted or other complicated forms of suture, or to expose the edges of the recti muscles (except in the rare cases of wide separation of the recti muscles) in order to obtain a perfect union. In an aseptic wound attention to the points mentioned above is sufficient. The adipose layer and outer integuments should be trimmed with the knife so as to fall easily into apposition. This involves excision of the umbilicus and a certain amount of skin on either side. The adipose layer is then caught together by several medium silk sutures, and the skin is united by silkworm gut.

A new feature in the surgical treatment of these cases is the excision of the thick layer of adipose tissue. This is thickest in the "double-chin"-like fold already referred to, but it covers the abdominal walls from the epigastrium to the pubes, and is sometimes several inches in thick-

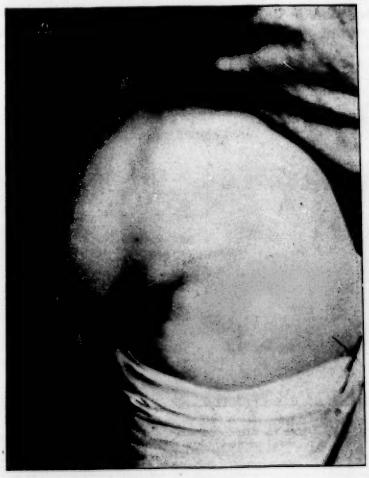


FIG. II. — Abdomen before removal of layer of adipose tissue (Case IX), side view.



FIG. III. — Case IX before operation — front view.

ness on the median line, tapering off to normal dimension on a line erected from the anterior-superior spinous process. To remove this layer the median incision should be extended through the skin and subcutaneous adipose tissue from a point about two inches below the ensiform cartilage to the transverse fold defining the upper limit of the mons Veneris. The skin with the adipose layer still attached is then dissected away from the aponeurosis of the abdominal muscles by long sweeps of the knife until the integuments have been freed as far as the loins. In doing this many vessels of considerable size

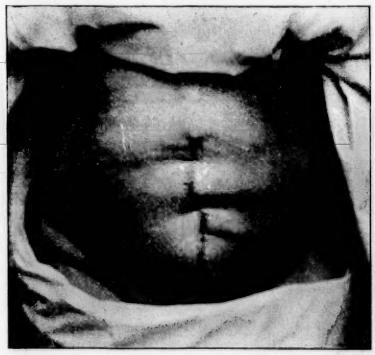


FIG. IV. — Case IX after operation for umbilical hernia and removal of abdominal fat — front view.

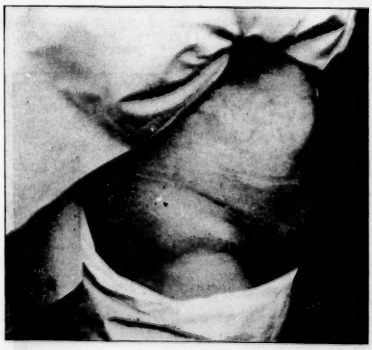


FIG. V. — Case IX after removal of adipose layer — side view.

are divided, but are easily secured. After both sides have been freed in this way, each half of the adipose layer can be removed from the skin with a long-bladed knife. After hemorrhage has been arrested the skin should be attached to the aponeurosis by two or three catgut sutures to prevent dead spaces, and the edges of the skin should be united in the usual way with silkworm gut. The cicatrix is at first unusually long for an abdominal scar, but, being superficial, contracts considerably with time. This method of obliterating the "double-chin" fold seems more effective than the employment of a long transverse or crescentic-shaped incision, by which the fold itself might be excised. Such an incision would, however, leave a scar at a point likely to cause irritation, as it would come directly at the point of constriction of the clothing.

I have tried this operation in two cases (Cases VIII and IX) with very satisfactory results. There was no shock from the operation nor was the convalescence in any way delayed by the extensive dissection of the flaps.

The following cases are taken partly from hospital and partly from private practice, and represent fairly well the type one has to deal with surgically:

CASE I. A. R., forty-six years old; married; very obese, but an active and strong woman, doing general housework. Was operated upon for the recurrence of an umbilical hernia, which was originally the size of an adult head with numerous pouches and adhesions. The dissection had been so prolonged at the first operation that the sac was not entirely removed, and recurrence had taken place eighteen months later. The second operation was performed December, 1890, and consisted in careful dissection and removal of the sac, and suture of the peritoneum as a separate layer. The aponeurosis was sutured transversely with silk stitches. In spite of some fat necrosis in the edges of the wound, good union was obtained, and there has been no recurrence. She was examined by me in 1900, and result proved to be perfect. The patient wears an abdominal belt, and is in active work.

Writing April, 1903, patient states: "I have had no return of the rupture. I am as well and free from any pain as though I was never in that condition."

CASE II. Harry U., fourteen months old, was sent to hospital November, 1894, with a congenital umbilical hernia the size of a walnut. The sac was dissected out, the peritoneum sewed with silk, and the aponeurosis brought together transversely with silk stitches. The vertical skin incision was united with silkworm gut. Examined by me in March, 1900, and the result found to be perfect. No truss.

CASE III. Mrs. R. J. R., forty-five years old; has had eight children and is very fat. Entered hospital November, 1897, with an umbilical hernia the size of a baby's head. It was operated upon in the same manner as above stated. The external wound was brought together in λ-shape. It healed by first intention. The patient reported eighteen months later a relapse, but preferred to get along with a truss instead of undergoing another operation.

CASE IV. Mrs. L. F., thirty-eight years old; five children. Entered the hospital November, 1897, with an umbilical hernia the size of a fist, produced after a fall down a bulkhead. The ring at time of operation admitted three fingers. The sac was excised and the wound sewed in separate layers — fine silk being used for the peritoneum and braided silk for the aponeurosis. The skin was united by silkworm gut. The wound healed by first intention. The patient has since worn an abdominal belt, and the result when examined in January, 1903, was found to be perfect.

CASE V. Mrs. M. C., sixty-seven years old; very fat, has five children; had been suffering for eight years with an umbilical hernia. Although she had worn a truss, the hernia was enlarging. At present the size of walnut. The operation was performed in December, 1898. A longitudinal incision opened the sac. Adherent omentum was excised, and the sac also. The material used in stitching the different layers was silk. Union by first intention. The patient was seen in March, 1900, when there had been no return of the hernia. Writing April, 1903, patient states that the operation was entirely successful, and she has had no trouble since.

Case VI. J. G., thirty-nine years old; a very obese Jewess, with five children, entered the Hospital October, 1900. The hernia had existed for eleven years at the time of entrance, the size of a cocoanut. It was reducible. After opening the sac the omentum which it contained was excised and silk sutures were used in the usual manner, the aponeurosis being brought together transversely. The wound united by first intention. In April, 1903, the patient was reported as having no recurrence of the hernia. She wears no belt.

Case VII. Mrs. Bridget W., twenty-eight years, medium-sized woman, with five children. In this case the hernia was about the size of a small apple. The patient also had a floating kidney, but preferred to have the hernia relieved first. The usual operation was performed November, 1902, and the wound healed by first intention. No reply was received to a letter of inquiry recently sent.

Case VIII. Mrs. C., fifty-one years of age. Operation Jan. 10, 1903. Has but one child, twenty-one years of age. Patient's weight is 209 pounds. Has an umbilical hernia about size of small orange which has existed for six years, but has never been strangulated.

Patient was particularly anxious to have the fat removed from her abdomen. The abdomen is pendulous, and the adipose tissue forms a deep fold below the umbilicus. An incision about nine inches in length was made in the median line, and the sac was carefully dissected out. An opening was then made in it, and the omentum being found adherent to several pouches in the sac could not be reduced. It was accordingly tied and excised. The peritoneum and the edges of the ring were united horizontally by separate rows of silk sutures. The skin and subcutaneous fat were now dissected off from the fascia of the rectus and the external oblique as far as the loins on either side. The hemorrhage (which was slight) was controlled by the ligature of several large vessels emerging from the aponeurosis. The adipose tissue was next dissected away from the skin on each side by large sweeps of the knife, and was removed in a large wedge-shaped mass. The skin was caught down firmly upon the aponeurosis by buried catgut sutures on either side, and the median incision was closed with silkworm gut suture. The wound healed throughout by first intention, and the patient left the hospital on Feb. 2. In August, 1903, she writes that her "health is good, no return of rupture; the abdominal fat is about the same as before operation."

Case IX. Mrs. S. A. J., age forty, was sent to me at the hospital by Dr. George Francis. Patient is a large and stout woman, and has had three children, nine years, four and a half years and fourteen months old. There is a large amount of fat in the abdominal wall, forming a pendulous mass below the umbilicus, where a hernia about size of an orange exists.[1] The hernia was first noticed six months ago after stepping out of a bath; three weeks ago began to be troubled with sharp pain in the umbilical region. There had been a slight swelling at this point ever since the birth of last child. The hernia can be easily reduced, and the ring admits the forefinger.

Operation Jan. 13, 1903. An incision was made on the median line about ten inches in length, with the umbilicus at its center. The sac was first carefully dissected out from the surrounding tissues without opening it. The sac was then opened and the omentum returned into the abdominal cavity and the sac excised. Silk sutures were taken in the cut edges of the peritoneum and the edges of the ring were brought together transversely by braided silk sutures. The skin and subcutaneous adipose tissue were now dissected away from the abdominal parietes, exposing the aponeurosis for about ten inches on either side. In this way the thick layer of adipose tissue which constitutes the fatty layer of the abdominal wall was separated from its attachments. After arresting bleeding from several arterial branches which emerged from the aponeurosis, the adipose tissue was carefully sliced off from the skin on either side. In this way two wedge-shaped masses of fat were removed, each measuring about three and a half inches in thickness and six inches in width. Their combined weight was about two pounds. After thoroughly arresting all hemorrhage the skin was caught down upon the aponeurosis on either side by two buried catgut sutures to prevent the existence of a dead space. The median incision was then brought together by silkworm gut sutures, some of them being deep enough to catch the underlying aponeurosis and hold the skin firmly in apposition with it.

The wound healed throughout by first intention, and the patient, eight months later, expressed much satisfaction with the result of the operation. There was no return of the rupture and no increase in the abdominal fat, since leaving the hospital.

Case X. Mrs. H., sixty-five years of age, was referred to me by Dr. George Francis in December, 1900. Her weight was 325 pounds. She has had five children. Has suffered from umbilical hernia since her last confinement. The hernia is about the size of a fist. Although it has not been strangulated, it has often been the seat of severe attacks of pain. Owing to great weight of patient it was decided to operate upon the bed upon which she was to lie after the operation. An incision four inches long laid open the sac. A mass of adherent omentum was tied off in sections with silk. The ring was large enough to admit the tips of three fingers. The sac was dissected out. The peritoneum was united with fine "intestinal" silk sutures. The edges of the ring were brought together transversely with silk sutures. The subcutaneous fat was also caught together with fine silk sutures so as to leave no dead spaces. The skin was stitched with silkworm gut.

In October, 1903, her nurse reports a perfect result (in spite of recent fall down stairs) — patient has derived much benefit from operation.

Case XI. Mrs. C., sixty-five years of age; weighs about 250 pounds; two children; was referred to me by Dr. E. G. Cutler. The hernia is of long standing and is about the size of an orange. It has never been strangulated. Was operated upon in March, 1901. A mass of omentum which was found adherent was tied off and excised. The application of sutures was the same as in Case X. Some skin was excised in this case, including the umbilicus. Union by first intention. In October, 1903, patient reports the scar to be perfect. No recurrence of the hernia. Wears an abdominal supporter.

Case XII. Mr. B., sixty-six years of age; weight 260 pounds; was referred to me by Dr. E. G. Cutler for an incarcerated umbilical hernia. There was pain and vomiting, and the hernia had been irreducible for twenty-four hours. It was reduced by taxis without ether, and held in place by adhesive straps. The operation for radical cure was performed a few days later, as the hernia (which for several years had been under control) now came down on getting out of bed and could not be reduced by the patient. The umbilicus was included between two slightly curved incisions, and its skin (which was excoriated and could not be thoroughly disinfected) was removed. The omentum was found adherent and covered with fresh exudation, and a portion which could not be returned easily was tied off and removed. Silk was used for the different layers as in previous cases. Owing to skin infection from abrasions the wound did not heal by first intention, and most of the buried sutures came away. The healing of the wound was, however, firm, and there was no hernia. About six months later, in March, owing to an attack of bronchitis, there was a slight recurrence of hernia, which, however, was held easily by an abdominal belt.

Case XIII. This case is introduced to illustrate the typical condition of lipomatosis associated with this form of hernia. The patient is a male, aged fifty-nine; a janitor by occupation. I was called to see him by Dr. F. G. Hersey for an acute pain in the left loin, emanating from a large subcutaneous tumor, probably lipoma (lipomatosis dolorosa?).[2] Owing to the existence of a skin affection no operation was advised. The fold of abdominal skin is double in this case — a second and smaller fold lying between the usual one and the mons Veneris, and entirely concealing the genitalia. The attack of pain was of a few days' duration, and its cause purely traumatic.

Case XIV. Mrs. F. In 1891 I reduced an umbilical hernia and fitted the patient, who was a very stout woman of fifty-eight, to an abdominal supporter. The rupture had existed twenty-two years, appearing at the time of her first confinement. By the constant attention of a

[1] Figs. II and III.

[2] Trans. Col. Phys., vol. xxiv, p. 17.

skilled attendant, a large share of whose time is devoted to the adjustment of the belt and care of the skin, the patient has suffered little pain or inconvenience from the hernia during the last twelve years.

Summarizing the data furnished by the above cases, we find two in which no operation has been performed. The contraindications in Case XIII were the presence of a chronic skin affection combined with lipomatosis and diabetes. In Case XIV the careful adjustment of a truss, advised many years ago (when the modern technique was not what it is now), has enabled the patient, aided by a skilled attendant, to overcome the tendency to strangulation which had previously existed. This case furnishes an example of one whose surroundings enables her to get along without an operation with a fair degree of safety.

Case XII, being a case of operation following closely upon a reduction of a strangulated hernia, furnished conditions unfavorable to strict asepsis, and recurrence in this case may therefore be ascribed to sepsis rather than the method adopted.

There remain eleven cases operated upon by the method advised in this paper. In only one of these cases has a recurrence been reported during periods varying from one to thirteen years.

In the case in which a recurrence took place the hernia was as large as a child's head.

This gives a record of about 9% of recurrence after operation — a record, which although it does not quite equal the very satisfactory results of operation for inguinal and femoral hernia, shows that this method of operating for umbilical hernia bids fair in time to rival them.

VESICO-INTESTINAL FISTULA.

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A. B., fifty-four years of age, married, cigar-maker, entered the Boston City Hospital, June 29, 1902. The previous history was unimportant except that he had never had any venereal disease. The present trouble began about three months previous to entrance, and had the following symptoms: distress and belching of gas after meals, cramps in the stomach occuring four or five times a day and lasting three or four minutes, occasional nausea and a constant sour taste in his mouth, attacks of dizziness two or three times a week. There was no edema, palpitation or shortness of breath, and no cough. Bowels constipated. Has the desire for a movement, but unable to get a satisfactory one. For the last few days troubled by the sudden stoppage in the flow of urine while micturating. Has pain before and after passing water. Nervous. Loss of strength and weight.

Physical examination. — Both pulse and temperature were slightly elevated. The examination was negative except for the urine. Urine analysis: neutral reaction, specific gravity 1,016, slight trace of albumen, no sugar. Sediment, few small caudate and small round cells, some fatty. Few large round cells. Considerable blood, normal and abnormal. Much pus, free and in clumps. Few squamous cells and at a later examination much mucus.

During his stay in the hospital it was noted that he complained of pain, most marked about and below the umbilicus and at times in the perineum. Micturition was at more frequent intervals than normal. A sample of urine drawn by catheter was cloudy and contained small masses of thick material. The patient was then discharged at his own request.

He entered the hospital again Jan. 28, 1903. The history of his condition since he left the hosptial was as follows: Last July had an attack of pain referred from the hypogastrium to the tip of the penis. Could not retain urine. Micturition caused a burning pain, and what seemed to be pus was passed. During the following December had an attack of sharp, cutting pain in the left lumbar region, shooting down toward the bladder. The attack was so severe that the patient was doubled up by the pain. Passed a stone of about the size of the end of the index finger. Since then the pain has continued unchanged. The stream of urine shuts off suddenly at times. Pain at the tip of the penis. Passes no blood, but a thick greenish-yellow urine which at times takes the form of casts. Has six or seven stools a day and the material passed looks like that which comes from the bladder.

The urine anyalsis was essentially the same as at the first examination. Examination with the fluoroscope was negative. Cystoscopic examination under ether was as follows: Motor power fair. No blood in washings. Bladder wall uniformly dark red in color (congestion with exudate), with pieces of mucous adherent. Rugæ not distinct. Trigone fairly distinct. Both ureteral orifices normal in size and functioning. Just inside left ureter and about 1 cm. above it is a circular spot about 1 cm. in diameter which is yellowish-white in color. Edges clearly defined and but little if any below the bladder surface. Posterior bar about 1.5 cm. Prostate outline normal. No growths or foreign bodies in bladder. Bladder wall about normal thickness.

Treated with daily irrigations of the bladder, and discharged improved to the Out-Patient Department, where the bladder washing was continued. The condition of the bladder became worse, and the patient was sent back into the hospital for a suprapubic cystotomy for drainage.

He was admitted to the service of Dr. Bolles, who kindly allowed me to operate. On March 30 the bladder was opened above the pubes.

Ether. — Bladder filled with boracic acid solution. Incision made in the median line. As bladder did not dilate well the peritoneum was accidentally opened but immediately closed with a suture. More solution was then injected into the bladder,which was opened between stay sutures. Mucous membrane of the bladder sutured to the muscles of the abdominal incision. Catheter fastened in the suprapubic opening, which was closed tightly about it.

Immediately after the operation feces began to come out of the suprapubic opening. On April 5 under ether the scrotum and surrounding areas were incised, because of the extravasation of urine and feces, under the skin, around the suprapubic opening. The rectum was examined at this opportunity under ether,but no fistulous opening was seen. During the next few days attempts were made to locate the position of the fistula. Methylene blue was injected into the rectum and almost immediately found in the bladder, while methylene blue injected into the bladder did not appear in the rectum.

The patient was slowly and steadily losing ground and was suffering severe pain from the irritation of the feces in the bladder. An immediate attempt to close the fistula was decided on. Inasmuch as the intestinal opening could not be seen in the rectum, it was thought best to first do an exploratory laparotomy to determine the site of the fistula. If it was then found to be too low down to reach comfortably through the abdomen the plan was to turn the patient over on his face and reach the fistula from below by turning back a bone flap from the sacrum.

Ether.— April 13. Suprapubic opening closed temporarily by continuous silk suture. Incision made through the left rectus, the lower end of this cut being on a level with the upper end of the suprapubic incision. The omentum was found adherent to the bladder. Adhesions broken up. Omentum very much thickened and indurated along its attachment to the bladder. Sigmoid found adherent to the upper part of the bladder about two inches from where it was adherent to the abdominal wall at the suprapubic opening. Adhesions between bladder and sigmoid broken up. Small hole found in the sigmoid with everted edges. Corresponding hole in the bladder about the size of a lead pencil. Purse-string suture of catgut around the opening

in the bowel. As this was tied the mucous membrane was inverted. Peritoneum then drawn as well as possible over this by intestinal silk suture. This was found rather difficult, as the stitches tore easily out. Hole in the bladder closed in a similar way by a purse-string suture, with the peritoneum then pulled over it. Wicks were left to separate the bladder and intestine, and the abdominal incision partially closed. To prevent the foul discharge from the suprapubic opening in the bladder from reaching the abdominal wound, oiled silk was sewed to the skin to separate the two dressings. Drainage of the bladder by catheter through the penis was unsatisfactory, so the suprapubic catheter was put in place. Instead of bringing it directly up from the opening in the bladder, it was carried through one of the sinuses made at the time of the urinary extravasation, so that it came out well down in the groin, and the skin at the suprapubic opening was drawn together over the catheter by adhesive plaster to minimize the leakage.

Immediately after the operation the patient developed a post-operative delirium which could not be controlled by drugs. Four days after operation the wicks were changed and a little fecal matter was noticed on them The delirium allowed him almost no rest at all, and gradully wore his strength out so that on April 19 he died. At this time there was a fecal fistula at the site of the abdominal incision, but the opening in the bladder had apparently remained closed.

Résumé of the case. — This, then, was a case of vesico-intestinal fistula without evidences of carcinoma or tuberculosis of the inflammatory type, with a stone of apparently secondary origin. The fistula was situated so high in the bladder that fluid would not pass readily from the bladder into the intestine, but freely the other way. The adhesions between the bladder and the intestine prevented a satisfactory dilatation of the bladder. The cystoscopic examination was misleading.

The first reference to a fistulous opening between the bladder and a portion of the intestine has been found in a report by Praxagorus. Since his time to 1900 Pascal[1] was able to collect accounts of 287 such fistulæ. Nevertheless, in spite of this comparatively large total, very few have been reported since modern surgical methods have been in use.

Vesico-intestinal fistulæ occur more often in men than women, 75% of the cases being found in men and 25% in women (Pascal). This is due in part to the anatomical position of the vagina between the bladder and the rectum, so that vesico-vaginal and recto-vaginal fistulæ are much more common than vesico-rectal. and in part to the greater liability of man to trauma, many of the reported cases having been due to gunshot wounds and sword-thrusts. The immediate cause of the fistula may occur in either the bladder or the intestine, or outside of both. The causes of the nontraumatic cases are cancer, tuberculosis and nontubercular inflammation, the last class being due to a great variety of diseases: cystitis, pericystitis, vesicle calculus, toxic enteritis, typhoid, dysentery, appendicitis, intestinal obstruction, stricture of the intestine, syphilis, actinomycosis. The simple inflammatory lesions cause the greatest number of fistulæ — 30.52% of 95 cases analyzed by Chavannaz.[2] Tubercular inflammation, with its primary focus in the intestine or the prostate, or less commonly in the bladder or seminal vesicles, furnishes 7.36% and cancer originating usually in the rectum, 20%. Pascal found the cause of the cases analyzed primary in the bladder in 18% and in the intestine in 35%. The causes of vesico-intestinal fistulæ, originating outside of either urinary or intestinal tract, are inflammation of the peritoneum or inflammation of new growth of the uterus and its adnexa. In these cases the primary focus secondarily invades both bladder and intestine, thus forming a fistulous connection between them. The infrequency of cancer of the bladder as the origin of the fistula is shown by a series of 4,774 autopsies done by Heiborn (Pascal), among which were only 37 cases of vesicle cancer and of these only 7 were primary. Of the 37, 9 had caused a vesico-intestinal fistulæ. As far as age is concerned the cases are fairly evenly distributed from early adult life till old age. The fistula may be formed by an agglutination of the bladder and intestinal walls with a direct connection at this point, or there may be a small canal between the two (Chavannaz, in 22.10% of the cases), or a cavity may exist independent of either intestine or bladder, and be connected with both by a fistulous tract. The fistula may be single or multiple, or single in the bladder and multiple in the intestine, or multiple in the bladder and single in the intestine. Ordinarily it is single in the bladder, in but 5 out of 95 (Chavannaz) cases were there several openings in the bladder. When there are several openings into the intestine they are usually into the same portion of it, though cases have been reported where they connected with distinctly separate areas. In 100 autopsies or operations tabulated by Pascal the orifice in the bladder was situated on the anterior face in 1 case, on the side 9 times, on the summit 13, in the base 17 and on the posterior surface 23 times, 19 of which were near the ureters. The connection with the intestine is in the great majority of cases with the rectum. Of 195 cases (Pascal) the connection was with the rectum in 113, with the colon and especially the sigmoid 42, and with the ileum 26 times. The opening of the fistula may form a valve which prevents the passage of material in one direction. The bladder itself is usually diminished in size, and eventually, with the urethra, becomes chronically inflamed, though it may withstand for a surprisingly long time the presence of the fecal matter. Infection ascending through the ureters and to the kidneys is rare. In 100 autopsies (Pascal) definite mention was made of the kidneys and ureters in 25 cases, in 7 of which they were healthy and in the remaining 18 showed the lesions of an ascending inflammation. Secondary stones may form in the bladder about a nucleus of fecal matter and be composed of either largely fecal material or phosphates. When a stone is found in the bladder the inference cannot be immediately drawn that the calculus was formed before the fistula and caused it by ulceration. These cases with stone must be carefully analyzed before the etiological value of the stone can be determined. The intestine below the fistula becomes

[1] Des Fistules Vesico-Intestinales acquises chez l'Homme. 1900.
[2] Ann. d. Mal. d. Org. Genito-urin., Par., 1897, xv, 1176.

inflamed and irritable from the presence of the urine, or the rectum may dilate and form a pouch in which the urine collects to be passed only at intervals.

The cardinal symptoms of vesico-intestinal fistula are the passage of gas and fecal matter through the urethra and of urine through the rectum. These symptoms, however, are not always present at the same time and one perhaps may be entirely absent. Patients often suffer intense pain constantly, or only at the time of micturition, due then to the passage of fecal matter through the urethra, which may become plugged, causing retention and urinary extravasation. There is both vesical and rectal tenesmus. The urine is that of the condition of the urinary tract, cystitis, pyelitis, etc., caused by the presence of the fecal matter plus the fecal matter itself. The cystitis or the irritation of a stone, either primary or secondary, may be severe enough to cause secondary ulcerations which may eventually perforate and form additional vesico-intestinal fistulæ.

The passage of gas with the urine is the most constant symptom and ordinarily the first to indicate the presence of the fistula. In some cases this is the only symptom, and the case may advance no farther. Pousson [3] reports a case where the passage of gas was the only symptom for two years and Pascal mentions one where there were no other symptoms for nine years. The gas is usually passed at the end of micturition. Occasionally it comes in the middle of it, when the stream of urine ceases till the gas has all come out. The passage of the gas is accompanied by a noise more or less whistling in character. The gas may disappear for several days, only to reappear again, and may be in some cases dependent on the position taken during micturition.

The amount of fecal matter in the urine varies within large limits. There may be no feces in the urine at any time, or they appear only when the patient has a diarrhea. Some have thought that the readiness with which the feces passed into the bladder was dependent on their diet, the amount always increasing after the ingestion of a certain food. The region of the intestine with which the fistula connects may be told in a rough way by the character of the fecal material found in the urine. Pieces of well-formed feces indicate a connection low down, while undigested material shows that it is high up in the intestinal canal. The length of time after eating before the appearance of the fecal matter is also a guide to the situation of the fistula. A microscopic examination of the sediment in the urine may be necessary to determine its intestinal origin and its characteristics. The fecal material may form a calculus or serve as a nucleus for a phosphatic stone.

The passage of urine through the rectum is a lessconstant symptom, and depends on the situation of the opening in the bladder and its valvular action. Its presence causes eventually an inflammation of the mucous membrane of the intestine. Occasionally the passage of urine from the rectum is the first symptom noticed by the patient. The urine may leak away constantly through the anus or be retained for a variable length of time and be passed only when the patient micturates or defecates. Some patients have complete control over these discharges, except when they are in an upright position or attempt to urinate.

It would seem that the diagnosis of a connection between the bladder and the intestine could be made from the presence of any one of the three characteristic symptoms, gas or fecal matter in the urine and urine in the stools. There are, however, other conditions than vesico-intestinal fistulæ which may give rise to some of the above symptoms. Gas may appear in the urine after catheterization or litholapaxy. It is developed sometimes in diabetes mellitus, when a yeast fungus reaches in some way, perhaps by the catheter, the urine in the bladder and sets up fermentation. It may occur also when purulent cavities with gaseous contents develop near the bladder and break into it. Pneumaturia occurs without any apparent reason in certain neuropathies (Guirard).

The presence of fecal matter in the urine is proof of the existence of a fistula with the intestinal tract. It may connect, however, with the urinary apparatus below the bladder. In an urethro-rectal fistula there will be anal urination only at the times when urine is passed through the urethra. A physical examination will settle the question. An examination of the rectum alone may determine the point. If the fistulous opening in the rectum is found below the prostate, the connection is probably with the urethra, while a fistula above the prostate probably connects with the bladder.

Urine in the rectum other than that due to a vesico-intestinal or a urethro-rectal fistula may occur in an uretero-intestinal fistula. The differential diagnosis can be made by the absence of fecal material in the urine and by the physical examination.

The various methods of physical examination are employed to determine not only the presence of a vesico-intestinal fistula but its site. The cases of new growths and tuberculosis which give rise to this condition must be so far advanced as to make their diagnosis easy. As the simple inflammatory fistulæ are the most favorable for treatment, an early diagnosis is important. The examination of the bladder and rectum may be by cystoscope and proctoscope. Failure to find the opening, especially in the bladder, does not necessarily mean its non-existence, for it may be so small that it is hidden by a fold of mucous membrane. The injection of a colored fluid into the rectum and its recovery later from the bladder, or *vice versa*, is sure proof of the presence of a fistula. A negative result from the injection one way does not rule out the fistula. The passage of the fluid depends on the position and the character of the opening of the fistula, and while it will pass in one way it may not in the opposite, or an existing intermediate cavity may be large enough to hold it all. In place of a colored liquid some have

[3] Assoc. français de Chir., 1896, Vol. x, 536.

used a chemical, and then tested for its presence in the fluid recovered later. The bladder has been filled with a chemical, and then the rectum, which has been wiped with a second chemical, examined by the proctoscope. Where the two meet at the fistula a characteristic reaction takes place, and the site of a connection which had escaped notice discovered. It has also been suggested to inflate the rectum with hydrogen gas and burn it as it issues from the end of a catheter passed into the bladder.

The prognosis depends primarily on the cause of the fistula, and in cancer and tuberculosis on the primary disease rather than on this complication. In the simple inflammatory fistula it depends largely on its size. This determines the amount of fecal matter which runs into the bladder, and on this depends the condition of the bladder. The more inflamed the bladder, the greater is the liability of an infection ascending to the kidneys. The fistula once present, the course of the lesions due to it is steadily forward. However, Harrison Cripps[4] reports that a spontaneous cure has occurred. Although a moderately large number of cases has been collected, so few are reported in recent times that no attempt has been made to estimate the length of time before the fatal termination, which is ordinarily inevitable sooner or later unless the fistula is closed.

The treatment is dependent primarily on the cause of the fistula, and in cancer or tuberculosis would be rather different from that devoted to a fistula of simple inflammatory origin. The treatment has varied greatly in different periods from a course of "Bristol water and asses' milk" to laparotomy. The treatment is divided naturally into palliative and radical. Specific medication should be used in a syphilitic case.

The palliative treatment is devoted to keeping bladder and rectum clean by frequent irrigations or permanent drainage, or in some cases by the position of the patient. In order to prevent the passage of feces into the bladder, an artificial anus may be formed above the intestinal end of the fistula. In order to get the full benefit from this operation, no feces must get into that portion of the intestine distal to the artificial anus, for they will in time reach the bladder. To prevent this the anus is made with a large spur or the lower opening is permanently closed. To accomplish the same object an entero-anastomosis may be made, joining the part of the intestine above the fistula directly with that below.

Vesico-intestinal fistulæ from the point of view which has in mind their radical cure are divided clinically into those accessible from the rectum, or vesico-rectal, and those inaccessible from the rectum, or vesico-intestinal, even though the fistula connects anatomically with the upper part of the rectum. Various procedures have been suggested for their radical cure, the more important of which I will briefly indicate:

Rectal route. — The anus is stretched and the edges of the fistula from inside the rectum are freshened and sutured in layers. Division of the sphincter ensures the free discharge of the feces and lessens the likelihood of the stitches tearing.

Perineal route. — Transverse incision in the perineum. The rectum is separated from the prostate and urethra in front. The peritoneum is pushed up out of the way if the fistula is high, and the fistula directly sutured. Drainage is advisable. It has been suggested that at the end of the operation the rectum be turned a little so that the repaired opening in the bladder may come against a healthy intestinal wall.

Sacral route. — Incision is made from the anus along the side of the coccyx and sacrum, and a bone flap turned back. The fistula may be reached by pulling the rectum to one side.

Vesical route. — Pousson[5] attacked the fistula through a suprapubic incision into the bladder. The mechanical difficulties of this method are great.

Abdominal route. — Separation of the intestine from the bladder and direct repair of the opening in each. Drainage.

Pascal gives the following results:

Rectal or perineal route with or without sphincterectomy, fourteen cases. Healing of the fistula in eight, failure in six.

Laparotomy seventeen times with nine failures, seven recoveries and one improvement.

The causes of death in the fatal cases were peritonitis and shock.

[4] Passage of Air and Feces from the Urethra.

[5] Congrès français de Chir., 1896, Vol. x, 536.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

PROCEEDINGS OF THE TWENTY-EIGHTH ANNUAL MEETING, HELD IN WASHINGTON, D. C., MAY 12, 13 AND 14, 1903.

(Concluded from No. 14, page 381.)

Dr. Hiram N. Vineberg of New York City contributed a paper on

THE ETIOLOGY, PATHOLOGY AND TREATMENT OF PUERPERAL SEPSIS.

Severe sepsis may be caused by a variety of pathogenic germs. The variety of germs found in the uterine discharge in a given case is no criterion of the severity of the case, and forms no safe guide as to prognosis or as to the treatment to be adopted. Bacteriological examination of the blood is of little value, either from a prognostic or therapeutic standpoint. The treatment of puerperal sepsis must be based chiefly upon the clinical history and physical signs of each individual case. Wounds or infection in the perineum, vagina or cervix are to be treated on the general surgical principles of irrigation and drainage. Curettage is indicated where there are evidences of placental decidual residue in the uterus independent of the variety of bacteria that may be found in the uterine cavity. In those rare cases in which adherent and sloughing placental tissue cannot be removed, either

with the sharp curette or fingers, hysterectomy is indicated, provided the patient is not already moribund. Hysterectomy is also indicated in cases of septic endometritis or infection of the placental site, so long as the infection is still limited to the uterus, and when the symptoms steadily grow worse in spite of uterine irrigation with or without curettage, and appropriate hygienic stimulating treatment.

In abscess of the uterus, the abdomen should be opened, and, when feasible, the purulent foci should be drained and the uterus preserved. If the uterus be studded with small abscesses, hysterectomy is indicated. The abdominal is to be preferred to the vaginal route for hysterectomy. If the infection has passed from the uterus into one or other tube, and has set up a violent grade of inflammation, the abdomen should be opened and the infected tube removed before a general peritonitis develops. When the infection has passed through the uterus and has set up a general peritonitis, a case might occasionally be saved by a timely abdominal section and drainage. In cases of parametric exudates the treatment should be conservative, and surgical intervention is indicated only when there are evidences of pus formation. In obscure cases in which the pathological lesion cannot be determined, and the symptoms are steadily growing worse, it may be advisable to open the abdomen to search for a hidden purulent focus or for a circumscribed slough of the uterus. The procedure proposed by Trendelenburg and executed by him and others, of ligating the pelvic veins when they have become infected and thrombosed, is worthy of further trial.

DR. WM. R. PRYOR of New York City took issue with the essayist in regard to the significance of certain pathogenic germs. In mild cases of puerperal sepsis very rarely is the streptococcus present, while in the severe ones streptococci are found. In the mild forms of the disease many other kinds of germs are found, chiefly staphylococci and saprophytic bacteria. The form of puerperal sepsis which demands careful attention is due to the streptococcus.

DR. EDWIN B. CRAGIN of New York City related his experience at the Sloane Maternity. In this institution infection occasionally occurs, because cases are taken undelivered, no matter whether they have been handled by midwives or by beginners. Women are admitted whether they are just in labor or whether they have been in labor for several days. Occasionally a patient has been lost from puerperal infection, although pathologist and bacteriologist were unable to find the streptococcus. A number of severe cases have been observed in this maternity in which a variety of bacteria were found in the uterus. In the management of puerperal sepsis he emphasized two points: First, to make sure the uterus is emptied; second, in making sure that it is emptied, do just as little damage to the inside of the organ as possible.

DR. J. WHITRIDGE WILLIAMS of Baltimore laid stress on the value of bacteriological examinations of the uterine lochia and of the blood. In many cases there is no definite indication for treatment from such examinations, yet there is no doubt in his mind that important and valuable information as to the condition of the patient can be elicited in this way, more particularly by examining the blood. He has seen but two cases of puerperal sepsis in which he feels operation was distinctly called for.

DR. MATTHEW D. MANN of Buffalo, N. Y., spoke of gonorrheal infection in connection with the puerperium. Recently he saw a patient in consultation, who had been sick for more than a week when she was first observed by him. Her temperature reached 111° before death. She had been having a temperature of from 107° to 108° for a number of days. Pulse was 120. Examination of the discharges by competent bacteriologists showed a pure culture of the gonococcus. There was no other germ present in any of the secretions. He thought the infection would localize itself and the woman would recover; but the joints and heart became affected, and the patient died.

DR. G. GILL WYLIE of New York City said there can be no question but that surgical intervention is indicated in some of the severe cases of puerperal sepsis. Of his first nine cases, which were treated at the Bellevue Hospital some twenty years ago, seven were dealt with locally and two surgically. He believes the uterus should be emptied in every case of severe streptococcus infection.

DR. EDWARD P. DAVIS of Philadelphia, in speaking of hysterectomy in cases of puerperal sepsis, stated that this operation has nothing definite to support it except in rare cases of adherent placenta. A method which yields good results where irrigation has failed, consists in opening the abdomen and inspecting the uterus, tubes and ovaries, freeing adhesions, etc., and, if there is a collection of pus in the tubes, drainage by means of iodoform gauze carried through into the vagina, separating the organs from abnormal adhesions.

DR. MALCOLM MCLEAN of New York City referred to the curette as a dangerous instrument in cases of puerperal sepsis in the hands of the average general practitioner. Emptying of the uterus is an absolute necessity in some cases, especially where there is evidence of putrid absorption, with chill and sudden high temperature.

DR. HENRY D. FRY of Washington, D. C., said the practice at the Columbian Hospital, where a large number of maternity cases were observed, was first to thoroughly clean out the uterus, particularly if the patients were seen at the beginning of sepsis and it was confined to the uterine cavity. After having taken a culture, active treatment of the uterus is suspended until the result of the culture is made known. If there are retained pieces of placenta, blood clots, accompanied with a foul odor, producing infection, the indication for cleaning out the uterus is clear. On the contrary, if the cul-

ture showed streptococcus, staphylococcus, colon bacillus or gonococcus, the uterus was left alone. In cases of streptococcus infection he believes the use of the curette does a great deal of harm, in that it breaks down the protective zone of inflammatory tissue, which is thrown out by nature and which causes ultimately a general systemic infection.

Dr. Herman J. Boldt of New York City said experience has taught him, so far as the treatment of puerperal sepsis is concerned, that a bacteriological examination of the secretions from the vagina or from the uterus, or a bacteriological examination of the blood, furnishes no indication whatever for treatment, because there is usually a mixed infection, both streptococci and staphylococci being found in the secretions of the uterus and vagina. Such patients frequently manifest mild clinical symptoms, although operative intervention is not indicated. In all cases that come under his care, examinations of the secretions and of the blood are invariably made, and in patients who show bacteria in the blood, even a pure staphylococcus infection, the general condition of the patient does not seem to indicate the need of surgical intervention, consequently they are left alone and recover. On the other hand, many patients show absolutely no bacteria in the blood, yet they die, so that, as the result of accumulated experience, bacteriological examinations of the secretions and of the blood of such patients do not give a definite clue as to the indication for treatment.

Hysterectomy is of no avail in the severe cases of puerperal sepsis, as the patients die within a few days.

Dr. Seth C. Gordon of Portland, Me., thinks surgical treatment is undertaken too early in some cases of puerperal sepsis. If there are abscesses of the Fallopian tubes, they should not be opened until one is quite sure that he can make a straight incision from the vaginal vault into the abscess cavity, without having any doubt as to whether pus is limited to the top of the vaginal wall. Every time an abrasion is made in the uterus or vagina with the curette or knife, he thinks a new avenue of infection is opened up, and causes, in many cases, a great deal of harm.

Dr. H. G. Wetherill of Denver, Col., referred to the Carosso method of treatment of puerperal sepsis, saying its value was unquestionable. This method has been advocated particularly by Dr. Edward J. Ill of Newark, N. J.

Dr. Charles M. Green of Boston contributed a paper entitled

REPETITION OF CÆSAREAN SECTION ON THE SAME PATIENT; THE EXPERIENCE OF THE BOSTON LYING-IN HOSPITAL.

After a brief summary of the experience of the Boston Lying-in Hospital with repeated Cæsarean sections, the writer raises the question whether it is justifiable in performing Cæsarean section for either an absolute or an elective indication to remove normal organs, or to resort to other procedures with a view to preventing subsequent pregnancy and the risk of a repeated section. The writer seeks to answer this question in the negative, and invited discussion of his views. Reference was made to a paper read by Dr. Coe at a meeting of the society in New York in May, 1896, entitled "Cæsarean Section; Suture of the Uterus *versus* Total Extirpation."

Of nine repeated sections, all performed on a relative indication, four were done, one each by four members of the staff, and five by the author. Two were done after labor had been in progress for nine hours each, and seven at an elected date before labor began. One patient had her first section without the hospital; six had their first and second, and one her first, second and third sections within the hospital. In one case there were no adhesions; in seven cases there were more or less adhesions. The duration of operation was from thirty-nine and one-third minutes to one hour and twenty-four minutes. In the case that died of shock the duration was forty-eight minutes. In one case the utero-abdominal adhesions were so extensive that the fetus was delivered without opening the peritoneal cavity, and the time of operation was thirty-eight minutes. The nine infants were discharged well; and of the nine mothers one died, a maternal mortality of 11%.

These results were not reported as unique or remarkable, because repeated sections have resulted favorably in other clinics, but they are reported in the hope of influencing opinion that the time has come when the society should withhold its approval of the doctrine that women should be sterilized at their first Cæsarean section, in order that they may not be subjected to the risks of a repeated section.

(To be concluded.)

Recent Literature.

Journal of Proceedings of the Sixth Annual Convention of the National Association of State Dairy and Food Departments, held at Portland, Oregon. Published under the direction of the Association.

This volume of 500 pages contains the laws of each of the states of the Union, relative to food inspection which were in force as late as 1900, together with the proceedings of the convention held at Portland, Ore., in 1902. An examination of these laws shows that nearly all of the states have enacted statutes providing heavy penalties for the awful crime of coloring margarin so as to resemble yellow butter, while more serious offences under the food laws are visited with lighter penalties. In some states the use of salicylic acid or other preservatives in milk and other dairy products is prohibited, while it is permitted in other articles of food, provided that the fact of such use is made known by a distinctly printed label.

The addition of five or six dozen photographs of state food officials does not improve the qual-

ity of the work, but may be taken as a cheap method of appealing to personal vanity.

The following statement may be found in the introduction of the work: "The increased inquiry for pure food being expected as the result of business announcements in these pages, carrying with it the guarantee of the purity of the products offered the consuming public, will serve the double purpose of increased demand for pure food goods and restrict the sale of adulterated ones." Whatever this statement may mean, there are advertisements of many food preparations in the book which would not stand the test of some of the laws laid down in the same work.

A System of Physiologic Therapeutics. — A Practical Exposition of the Methods, other than Drug-giving, Useful for the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D. Vol. viii. Rest, Mental Therapeutics, Suggestion. By FRANCIS X. DERCUM, M.D., Ph.D. Philadelphia: P. Blakiston's Son & Co. 1903.

The eighth volume of this series has appeared under the authorship of Dr. F. X. Dercum of Philadelphia, on the subjects of Rest, Mental Therapeutics and Suggestion. Of these three therapeutic measures, Rest, or the so-called "rest-cure," is given the place of chief importance. In working out this important branch of his subject Dr. Dercum has gone rather far afield in considering etiological and pathological as well as clinical and diagnostic matters, all of which, however, add very materially to the comprehensiveness and value of the book. The final section concerns itself with Suggestion. This subject receives a skillful and rational treatment which should be appreciated not only by those concerned in diseases of the nervous system, but also by practitioners in every branch of medicine. A brief consideration is given of the curious and always interesting vagaries of the human mind, which have resulted in such methods of treatment as metallotherapy, mind cure, faith cure and Christian Science. We commend especially Dr. Dercum's views on the subject of Rest. There can be no question that this method of treatment has been overdone, frequently to the positive detriment of the patient's condition. What we need is a sane, rational presentation of this important therapeutic measure, taken in conjunction with other means of treatment. This Dr. Dercum has apparently given us. He believes in work and exercise as well as rest in many functional nervous disorders. "Partial rest" is a favorite expression with him, and this we think is usually indicated. Naturally in a book of this sort many topics slightly foreign to the subject under discussion, for example, the symptomatology of various diseases, are taken up, though not in detail. In general we are glad to say that this is a fitting continuation of the excellent series of volumes which have preceded it.

THE BOSTON

Medical and Surgical Journal

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TYPHOID FEVER AND IMPURE ICE.

SINCE the usual source of infection in typhoid fever has been discovered, it has been natural that from time to time considerable attention should be paid to the possibility of the transmission of the disease through ice formed from contaminated water. It will no doubt be remembered by some of our readers that an investigation of the Boston ice supply, conducted under the auspices of the Board of Health, was published in this JOURNAL in 1901, with the general conclusion that ice more than three weeks old is practically as safe as a well-filtered water supply. Inasmuch as infection, if it occurs at all from ice, would naturally follow the cutting, it was held that after March the ice could not be held responsible for an outbreak of the disease, even were it known originally to have been infected. As a matter of fact, on analysis very few cases of the disease have been shown to be due to ice. This renders a careful piece of work on the subject by Dr. R. H. Hutchings and Dr. A. W. Wheeler of the St. Lawrence State Hospital at Odgensburg, N. Y., published in the current number of the *American Journal of the Medical Sciences*, worthy of comment.

The tracing of an epidemic of typhoid at the St. Lawrence Hospital by these investigators certainly seems to indicate that under favoring conditions ice may be the source of the disease. Formerly the hospital was supplied with drinking water through the St. Lawrence River, but this, having been definitely shown to be the source of very considerable epidemics of typhoid, was abandoned after various measures for purification had been investigated. Thereafter water was obtained from a small Adirondack stream, which supplies the city of Ogdensburg. This change led to a practical disappearance of the disease for

about two years, and during this time the water was not boiled and ice was freely used. In the latter part of 1902 typhoid fever again appeared, and after a careful investigation of the water and milk supplies it was determined that the ice used in the institution was the probable source of infection. This ice had been taken from the St. Lawrence River and had been stored more than seven months. It appears that when this particular ice was forming, three or four cases of typhoid fever had occurred in the city among users of well water. Ice cut from the same place had previously been used for upwards of ten years and had never before been suspected. Bacteriological investigations of specimens of drinking water and melting ice were undertaken by Dr. George Blumer of the Bender Laboratory in Albany, whose report led to the strong suspicion that the ice was at fault. Further careful investigation brought out the fact that the ice, which contained considerable extraneous matter, was contaminated with numerous organisms, many of which were motile. Cultures showed a rapid growth, and colonies of colon bacilli and typhoid bacilli were finally isolated. The tests applied in the case of the suspected typhoid organisms left no doubt in the minds of the observers that they were dealing with Bacillus typhosus. In three of the cases the disease was clinically identified by autopsies. In further support of the contention that ice was the source of the infection is the fact that with the discontinuance of the use of this ice the epidemic gradually subsided. There were in all thirty-nine cases. At present, with the exception of a different ice supply, the conditions are the same as at the beginning of the epidemic. The water used is not boiled.

This piece of careful work should be widely read. It is apparently a justification for the opinion, long theoretically held, that under certain favoring conditions ice may be a definite and dangerous source of typhoid fever, and should lead to definite precautions against the spread of the disease from this source. Although the work of the Boston Board of Health was apparently conclusive, so far as it went, this new experience at Ogdensburg should suggest further experiment in which the natural conditions are as closely simulated as it is possible to make them under artificial experimental conditions.

INTERNATIONAL CONGRESSES ON SCHOOL HEALTH.

We are in receipt of a circular printed in three languages designed to excite interest in the question of the establishment of international congresses on the health of school children. Attention is called to the fact that among the various branches of hygiene, public and school health are of the first importance; that many authorities on hygiene have attempted to arouse interest in these branches; that physicians, teachers and governments have done what they could to forward the work, recognizing the extreme importance of hygiene of the school in its influence on the development of healthy adult life.

It is now proposed to bring together persons interested in the general subject in congresses, to be held at various intervals. Societies on school hygiene have already been formed, both in English-speaking and Continental countries. The establishment of the formal congress is simply another step toward unifying the work on the general subject. It is proposed that this congress assemble every three years, and it is already announced that the first is to be held in Germany in the spring of 1904, at which papers may be read in any European language, with preference for English, German or French.

Membership in this congress is open to all who take interest in the promotion of improved school hygiene. Each member, by contributing a small yearly sum, receives all the privileges of membership in the congress. Some of the subjects which will be particularly discussed are hygiene of school buildings, hygienic instructions for masters and pupils, bodily training of pupils, illness, petty ailments and medical attendance in schools, questions concerning children of weak intellect, and, finally, hygiene of the faculty.

This movement is most certainly commendable, and that the existence of such an association, drawing its membership from all civilized countries, would do very much toward establishing schools everywhere on a far better basis as regards the health of the pupils is self-evident. It needs no comment from us to demonstrate the essential importance of work, beginning in the very earliest years of school life, toward the establishment of health

AMERICAN RESEARCH.

In an editorial comment *American Medicine* speaks of an editorial on "American Research and German Reviewers," which recently appeared in the *Journal of the American Medical Association*, as follows:

Under this title the *Journal of the American Medical Association*, in one of its recent issues, had an editorial to

the effect that American investigations did not receive full justice at the hands of German reviewers. To a certain extent there is undoubtedly some foundation for the assertion, but on the other hand it is only fair to admit that during the last few years special publications in Germany have honestly endeavored to cover their respective special fields as exhaustively as possible, which would naturally include the American contingent. Although these German reviews give the greatest prominence to those investigations which have originally been published in the German language, the American investigator, on the whole, does not fare any worse than his colleagues in any other non-German country. This is in so far a satisfactory feature, as it clearly proves that American research has successfully asserted its claim to international recognition and that the spirit of healthy, vigorous aspiration will not allow itself to be suppressed.

We are inclined to agree with this view of the situation. Although there is still apparently a certain lack of knowledge of the English language on the part of German reviewers, it is nevertheless true that this defect is growing less and that worthy American or English work is finding a more and more appreciative recognition at the hands of the Germans. Another ten years will no doubt complete the good work already begun by establishing once for all the claim of American research to universal recognition.

Following this very just statement of the situation *American Medicine* also makes the following comment:

> If American investigators desire to be fully and seriously recognized by European scientists they will have to furnish unmistakable evidence that their work is solely the outcome of a desire to further the true interests of science. There should exist among American medical authors a feeling of solidarity with an ever-ready willingness to give credit where credit is due. It will not do to laud to the skies for selfish motives European productions which cannot hold a candle to home researches. In other words, we must ourselves be convinced and be in a position to convince others of our scientific maturity and zeal, before we can reasonably expect to command the recognition of foreign nations. It is all very well to talk about "international science" — the weaker is perfectly willing to profit from internationality by taking from the stronger whatever good he can find, but where is there any adequate compensation for the stronger?

Here we cannot agree with our contemporary. So far as our observation has gone, there is no conspicuous lack on the part of American authors in giving due credit for work done, whether native or foreign. Possibly a few youthful students, fresh from the laboratories of Europe, are apt to overestimate the value of their foreign training and to minimize the good things at home, but after a few years' experience we are convinced that the American investigator, as a rule, takes a perfectly fair attitude toward investigation whereever it may appear. Possibly our experience in this matter may be small, but we are very sure that we have already reached that "scientific maturity" which is capable of taking a broad point of view.

MEDICAL NOTES.

AN HONOR FOR PROFESSOR VON BEHRING. — It is announced that Professor Von Behring has been made a member of the Prussian Privy Council with the title of "Excellenz." Medical men have rarely received this distinction, and the few who have up to this time have been surgeons.

PROFESSORSHIP IN THE HISTORY OF MEDICINE. — It is reported that the University of Maryland has established a chair in the history of medicine and that the first incumbent is to be Dr. Eugene F. Cordell of Baltimore. We hope this may pave the way to many more such professorships.

ACCIDENTS IN THE ALPS. — News from Geneva states, according to *American Medicine*, that never before in the history of the Alps have death and disaster been so common on the mountains as during the present season. Over 300 accidents have occurred, resulting in the loss of no fewer than 150 lives. Over half of this season's accidents have happened to Germans and Austrians, who, partly from bravado and partly from pecuniary reasons, almost invariably climb without guides.

MEDICAL UNION IN THE STATE OF NEW YORK. — A special meeting of the council and fellows of the New York State Medical Association was held Oct. 1 in New York, for the purpose of discussion of the question of medical union in New York State. The following resolutions were passed:

"*Whereas:* The members of the New York State Medical Association desire a union of the medical profession in the State of New York, and

"*Whereas:* It is deemed expedient for the attainment of this purpose to make further effort to bring together the New York State Medical Association and the Medical Society of the State of New York under the name of 'The Medical Society of the State of New York':

"*Resolved:* That a committee of five be appointed by the chair, and said committee is hereby empowered to do whatever is necessary and expedient to bring about such a union in a just and equitable manner, and

"*Resolved:* That the committee so empowered may confer, coöperate and unite with a committee

of the Medical Society of the State of New York for the purpose of forming said union of the two medical organizations, and

"*Resolved:* That a copy of these resolutions be transmitted to the secretary of the Medical Society of the State of New York, with a request that their Conference Committee be granted similar powers."

Confederation of Reciprocating, Examining and Licensing Medical Boards. — A meeting of the American Confederation of Reciprocating, Examining and Licensing Medical Boards will be held at St. Louis, Oct. 27. Reciprocity certificates are at this time being issued daily between several of the states, members of and in sympathy with the confederation; and the executive officers of such reciprocating boards will be present at the meeting and will severally give brief addresses upon "Reciprocity from the Standpoint of Experience in the Interchange of State Licenses." Several eminent medical men throughout the United States not directly connected with medical boards have been invited to attend the meeting and to take an informal part in the proceedings. Among others who have accepted are Dr. Frank Billings of Chicago, President of the A. M. A.; Dr. William E. Green, Little Rock, Ark., Member Committee on Medical Examining Boards, A. I. H.; Dr. Charles A. L. Reed, Cincinnati, Ex-President A. M. A.; and Dr. Frank J. Lutz, St. Louis, Secretary-General of the World's Congress of Medicine, 1904.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 7, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 49, scarlatina 28, typhoid fever 22, measles 18, smallpox 0.

Bequest to Melrose, Mass., Hospital. — By the will of the late Royal F. Barry the Melrose Hospital receives one thousand dollars.

A Decision in Favor of Christian Science. — A decision of the Supreme Court of New Hampshire in a case brought against a so-called Christian Science healer established the legality of the practice of Christian Science healing in that state by ruling in the defendant's favor. On a charge of fraud also brought against the "healer," the court sustained the plaintiff. We question whether this combination of decisions has before occurred in a single case.

NEW YORK.

Physicians and the Hall of Fame. — In the course of an address at the opening of the New York University and Bellevue Medical College on Sept. 30, Dr. MacCracken, the chancellor of the university, stated that he had received a letter from a physician, who is also editor of a medical journal, asking him for an article upon this question, How do physicians stand in relation to the electors of the Hall of Fame? He then went on to say: "The decision as to the names to be inscribed in the Hall of Fame belongs to a board of one hundred electors. What place have physicians had in this whole matter? Of the one hundred judges, four were doctors of medicine. There is no support for the position that has been taken by certain writers that the absence of physicians from the Hall of Fame is explained by the small percentage of physicians in the Electoral Board." At the time the official vote for names for the Hall of Fame was given out the number of votes cast for the names of Dr. Rush and other eminent medical men was announced, but in no instance was this number sufficiently large to secure a place among the immortals.

A Proposed Public Park. — At a meeting of the Board of Estimate and Apportionment held Sept. 30, Mr. De Forest, the tenement house commissioner, and others spoke in regard to a proposed public park at Monroe Market, Hamilton and Catherine streets, on the East Side. Mr. De Forest urged that a park should be established in this locality, but suggested that, instead of the block proposed, the board should take the adjoining block to the south, which is known in the district and in the Health Department records as the "lung block," because of the prevalence of consumption there. "Many of the houses in the block," he said, "are permanently infected with the germs of tubercular disease. Certain of these houses have had in the past five years as many as twenty-two cases of pulmonary tuberculosis in each house, as far as the records of the Board of Health go. It is probable that the actual number of cases of tuberculosis in each house is double this amount, as it is well known that only one-half the cases are reported to the Board of Health." Definite action in the matter will be taken next month.

Pollution of Passaic River. — On Oct. 2, Judge Mahlon Pitney, of the Supreme Court of New Jersey, set aside a verdict by which a local jury, in the face of the court's instructions, at-

tempted to aid Paterson in the fight which surrounding communities are making upon the city for its part in the pollution of the Passaic River. The suit in which this occurred was one brought by Catharine Simmons of Dundee Lake to recover $25,000 damages for the alleged destruction of her ice business by the sewage of Paterson. The court practically directed a verdict for the plaintiff at the close of the trial, but the jury, declining to follow the court's instructions, found that the plaintiff had no cause of action. The verdict is set down to an overzealous loyalty of the Paterson jurors to the interests of the city in a struggle in which it has been engaged for years with all the surrounding country. One of the purposes of the ten-million-dollar trunk-sewer which is about to be built on the Passaic River is to intercept the sewage which Paterson dumps into its waters. The owners of mills and other property along the river banks have long been in arms against the pollution of the stream, and the cities of Newark and Jersey City, which formerly drew their drinking water from it, were eventually obliged to abandon it and look elsewhere for their supplies.

Obituary.

GEORGE HAVEN, M. D.

DR. GEORGE HAVEN, whose death occurred on Sept. 27 last, was born in Portsmouth, N. H., July 13, 1861. He graduated from the Harvard Medical School in 1882. He served a year as house physician of the Children's Hospital in Boston. The next two years were spent abroad, where in the hospitals of Munich and Vienna he devoted himself to the study of obstetrics and gynecology. In 1887 he began practice in Boston. He was connected with the Boston Dispensary from 1887 until his death, at first as district physician, later as physician for diseases of women. He was assistant visiting physician in the Lying-In Hospital for ten years, resigning in 1900. Here he initiated a series of Cæsarian sections, the success of which had much influence in the community in establishing the value and safety of this operation. He was appointed to the Department of Diseases of Women at the Boston City Hospital in 1889, and at the time of his death was junior visiting physician.

He served for several years as assistant in Obstetrics at the Harvard Medical School and still held the position of instructor in gynecology.

Dr. Haven was a man of exceptional value in the community. Refined, well-balanced, straightforward, strong in mind and in body, he safeguarded at the same time the best interests of his patient and of the profession. He has added significance and dignity to the specialty of obstetrics and gynecology, during a period when the recognition of the necessity of such a specialty was doubted by a large number of the profession.

As a physician, wise in counsel, tireless in devotion, tactful and confident, with a strong personality and reassuring presence, he brought hope and comfort to the sick-room. His patients were his friends, whose trust and love he possessed in a remarkable degree, to whom his services were freely offered without thought of self. His sense of duty was well illustrated by his response to his last professional call. In the acute stage of the illness which three weeks later caused his death, he rose from bed to attend a patient during a grave attack of eclampsia. His own condition was forgotten, while he worked with the assistance of a younger colleague until compelled by exhaustion to stop, only to return again and again to the task of a difficult delivery, as momentary strength was regained. The patient's life was saved.

As an operator he showed unusual judgment and untiring patience. He was skillful, careful, resourceful and successful. Conservative, yet bold, he was willing to assume the largest measure of responsibility, but the interests of his patients were never forgotten.

As a consultant his practice constantly increased as his diagnostic ability and operative skill became more widely known. Inflexibly recognizing the welfare of the patient as his first duty, his tact and high sense of responsibility peculiarly qualified him for the exacting requirements of this relation. His professional success was already definite and assured. A longer life could have but enlarged its measure.

Miscellany.

THE SYSTEMATIZATION OF EFFORTS TO REDUCE INFANTILE MORTALITY.

THE failure of sanitary efforts to reduce infantile mortality is the most unfavorable fact in the history of Great Britain in the last twenty years. It was not altogether unreasonable to expect that public health administration would have a very great influence in reducing infantile mortality to what may, under present conditions, be regarded as a normal standard; namely, one death under one year of age out of every ten born. But although the removal of privies and cesspools and of other nuisances, the improved conditions of housing, the more cleanly habits of the people, must have had some influence in the right direction, various social factors have been at work which have at least counterbalanced the good effect of sanitary improvements. These are, in particular, the greatly increased urbanization of the population, the more

frequent non-domestic employment of married women, and the increasing tendency of mothers to neglect their primary duty of nourishing their infants. The last is the most serious evil of all, town-living by itself not necessarily implying a greatly-enhanced risk of death during the first year of life. Whether due to unwillingness of mothers to perform this duty or to the practical difficulties involved in the industrial employment of women, the fact remains that artificial feeding of infants is a main cause of infantile mortality.

In another column we publish a brief analysis of communications made to the International Congress of Hygiene at Brussels, describing the organized efforts made in France and Belgium to reduce infantile mortality. With regard to France, there is little to add to the full account of the system which was given in the series of articles on the milk supply of large towns published in our columns last spring, and it will be seen that in Belgium similar methods are followed. In both countries the importance of medical supervision is more fully recognized than in this country. Sterilized milk for infants is now supplied by several municipalities in Great Britain, but hitherto there has been, in connection with these efforts, so far as we are aware, no attempt to combine the provision of milk with a weekly medical consultation, involving a weekly physical examination and weighing of the infant and an adaptation of its food to the special requirements of each case. This would be difficult to manage in England without the consent of the family practitioner. But is it not of the essence of the experiment and is it not indispensable for its success, that such weekly observations should be made and that the use made of the sterilized milk should be checked at frequent intervals? We are of opinion that efforts should be made to overcome the difficulties in the way of weekly medical examination in connection with the supply of sterilized milk.

Stress also may be laid on the possibility of a supply of sterilized milk encouraging mothers not to suckle their infants. The particulars as to the means by which this danger is avoided in connection with the French maternity charities are particularly interesting. It is open to doubt whether similar inducements could be held out in England among any except the very lowest class without exercising a pauperizing influence. But in connection with the infants born in workhouses and those born in connection with maternity charities, some further efforts ought to be made and the methods adopted in France, although they should not be slavishly copied, are worthy of consideration and may at the least suggest methods of procedure which will be consistent with the retention of self-respect on the part of the mother, while giving her infant an improved prospect of surviving the first year of its life.

The subject is one deserving of further study, of careful experimental work, and the co-ordination of measures, already in operation or about to be adopted, should be borne in mind in any attempts at extended work. — *British Medical Journal.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 26, 1903.

Cities.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,174	430	20.53	9.54	2.55	4.17	.17
Chicago . . .	1,885,000	498	152	29.92	6.42	3.61	12.24	3.00
Philadelphia	1,378,627	410	109	25.85	4.39	2.93	6.34	1.95
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	535,712	171	—	31.00	7.01	1.16	7.01	2.28
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	—	—	—	—	—	—	—
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	64	28	34.36	3.12	—	20.30	—
Boston . . .	603,163	197	77	33.50	4.57	1.01	13.70	2.03
Worcester . .	132,044	29	16	24.13	3.45	—	10.34	3.45
Fall River . .	115,549	31	17	48.39	16.13	—	35.48	3 22
Lowell . . .	101,259	24	11	25.00	8.33	—	16.67	—
Cambridge .	98,639	37	15	40.53	8.10	8.10	16.20	—
Lynn	72,497	15	4	13.33	6.67	6.67	—	—
Lawrence . .	69,766	22	12	50.00	4.54	4.54	18.18	—
Springfield .	69,389	9	3	22.22	—	—	22.22	—
Somerville .	68,110	13	5	46.30	7.70	—	21.21	—
New Bedford	67,198	24	15	29.16	12.50	—	25.00	—
Holyoke . . .	49,286	—	—	—	—	—	—	—
Brockton . .	44,873	13	3	15.40	—	—	—	—
Haverhill . .	42,104	5	1	20.00	—	—	20.00	—
Newton . . .	37,794	10	3	—	—	—	—	—
Salem	36,876	10	—	—	—	—	—	—
Malden . . .	36,286	9	3	44.44	—	11.11	—	11.11
Chelsea . . .	35,876	9	4	11.11	22.22	—	—	—
Fitchburg . .	35,069	5	3	40.00	—	—	—	—
Taunton . . .	33,656	12	4	16.67	16.67	—	16.67	—
Everett . . .	28,620	5	2	40.00	—	—	—	—
North Adams	27,992	6	4	33.33	—	16.67	—	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	8	3	25.00	—	—	12.50	—
Waltham . .	25,198	6	1	33.33	—	—	—	16.67
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,580	2	—	—	—	—	—	—
Chicopee . .	21,031	3	1	—	—	—	—	—
Medford . . .	20,962	3	1	33.33	33.33	—	33.33	—
Northampton	19,883	4	2	—	25.00	—	—	—
Beverly . . .	15,302	4	—	25.00	—	—	25.00	—
Clinton . . .	15,161	4	3	75.00	—	—	75.00	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	—	—	—	—	—	—	—
Woburn . . .	14,300	—	—	—	—	—	—	—
Hyde Park .	14,175	6	5	50.00	16.67	—	50.00	—
Adams . . .	13,745	6	—	50.00	—	—	50 00	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	—	—	—	—	—	—	—
Melrose . . .	13,600	1	—	—	—	—	—	—
Westfield . .	13,418	3	1	—	33.33	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	6	3	33.33	—	—	16.67	—
Framingham	12,584	5	1	20.00	20.00	—	20.00	—
Peabody . . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	4	4	75.00	25.00	—	50.00	—
Weymouth .	11,344	1	1	100.00	—	—	100.00	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	4	3	25.00	—	—	25.00	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,014; under five years of age, 1,017; principal infectious diseases (smallpox, measles, scarlet fever, cerebro-spinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 814, acute lung diseases 218, consumption 343, scarlet fever 11, whooping cough 27, cerebrospinal meningitis 15, smallpox 16, erysipelas 8, puerperal fever 4, measles 9, typhoid fever 43, diarrheal diseases 258, diphtheria and croup 80.

From whooping cough, New York 3, Chicago 5, Philadelphia 10, Baltimore 3, Pittsburg 3, Lawrence, Fitchburg and Quincy 1 each. From erysipelas, New York 2, Chicago 3, Philadelphia 1, Boston 2. From smallpox, Philadelphia 1, Pittsburg 15. From scarlet fever, New York 4, Chicago 2, Philadelphia 1, Baltimore 1, Pittsburg 1, New Bedford 1, North Adams 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Sept. 12 the death-rate was 15.8. Deaths reported, 4,575; acute diseases of the respiratory organs (London) 122, whooping cough 66, diphtheria 35, measles 28, smallpox 1, scarlet fever 36.

The death-rate ranged from 5.0 in Bournemouth to 27.7 in Wigan; London 15.2, West Ham 19.6, Brighton 14.6, Portsmouth 15.5, Southampton 17.0, Plymouth 19.1, Bristol 12.5, Birmingham 18.5, Leicester 13.7, Nottingham 16.3, Bolton 18.0, Manchester 17.6, Salford 16.1, Bradford 14.5, Leeds 11.8, Hull 20.9, Newcastle-on-Tyne 19.2, Cardiff 12.7, Rhondda 17.9, Liverpool 18.8, King's Norton 10.6, Middlesbrough 22.5.

METEOROLOGICAL RECORD.

For the week ending Sept. 26, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. 20	30.38	56	60	51	73	80	76	N E	N E	9	9	O.	C.	0
M. 21	30.15	56	62	51	84	66	75	N	W	12	6	O.	C.	0
T. 22	30.13	66	78	55	68	42	55	N W	N W	10	4	C.	C.	0
W. 23	30.02	67	79	55	59	66	62	W	S	2	9	C.	C.	0
T. 2	29.76	58	67	49	84	44	64	W	N W	8	14	O.	C.	.01
F. 23	30.04	55	65	45	58	59	58	N W	W	9	8	C.	C.	0
S. 26	30.18	62	74	49	60	79	70	N W	S W	3	12	C.	C.	0
☞	30.09		69	51			66							.01

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING OCT. 3, 1903.

S. W. DOUGLAS, pharmacist. Detached from Naval Proving Ground, Indian Head, Md., and ordered to Navy Yard, Portsmouth, N. H.

W. S. PUGH, Jr., assistant surgeon. Appointed an assistant surgeon, with the rank of lieutenant, junior grade, from Sept. 23, 1903.

M. V. STONE, assistant surgeon. When discharged from treatment at the Naval Hospital, New York, ordered home and granted sick leave until Dec. 31.

S. H. GRIFFITH, surgeon. Detached from the Marine Barracks, Washington, D. C., and ordered to the "Minneapolis" and to duty as fleet surgeon of the Atlantic Training Squadron.

R. B. WILLIAMS, assistant surgeon. Detached from the First Torpedo Flotilla, and ordered to the Naval Hospital, Norfolk, Va.

F. M. BOGAN, assistant surgeon. Detached from Navy Yard, Washington, D. C., and ordered to the "Chauncey" for duty with the First Torpedo Flotilla.

SOCIETY NOTICE.

NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — A regular meeting of the society will be held at Hotel Nottingham, Boston, Mass., on Thursday, Oct. 15, 1903, at 7.30 P.M. The meeting will be in charge of the Section on Dermatology, Dr. Edith R. Meek, chairman. Exhibition of patients treated with the X-ray. Papers: Dr. Edith R. Meek, "X-Ray Work from the Chemical Standpoint;" Dr. Mabel Austin, "Histological Changes Occurring in Tissues Subjected to the X-Ray," illustrated by microscopical sections; Dr. Antoinette Konikow, "Brief Résumé of Current X-Ray Literature." Discussion by Drs. Smith, Culbertson, Alexander and others.

DR. AGNES C. VIETOR, Secretary.

TRINITY COURT, BOSTON.

BOOKS AND PAMPHLETS RECEIVED.

A Narrative of Medicine in America. By James Gregory Mumford, M.D. Philadelphia and London: J. B. Lippincott Company. 1903.

Nurses' Guide to Surgical Bandaging and Dressings. By Wm. Johnson Smith, F.R.C.S. Illustrated. Philadelphia: J. B. Lippincott Company.

Intracranial Tumors among the Insane. A Study of Twenty-nine Intracranial Tumors found in Sixteen Hundred and Forty-two Autopsies in Cases of Mental Disease. By I. W. Blackburn, M.D. Illustrated. Washington: Government Printing Office. 1903.

The Boy's Venereal Peril. By F. C. V. Reprint. 1903.

Aids to Cystoscopic Practice. By Fred C. Valentine, M.D., of New York. Reprint. 1903.

A Contribution to the Study of Mouth Bacteria. By Samuel A. Hopkins, M.D., D.D.S., of Boston, Mass. Reprint. 1903.

Hypnotism: Its History, Practice and Theory. By Z. Milne Bramwell, M.B., C.M. London: Grant Richards. 1903.

Text-Book of Histology, including the Microscopic Technic. By Dr. Philipp Stöhr. Fifth American from the Tenth German Edition. Translated by Dr. Emma L. Bilstein. Edited, with additions by Dr. Alfred Schaper. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

Scheme for the Differential Testing of Nerves and Muscles for use in Diagnosis. By J. Montgomery Mosher, A.M., M.D. Illustrated. Albany, N. Y.: Brandow Printing Company, Fort Orange Press. 1903.

The Crusade against Tuberculosis. Consumption a Curable and Preventable Disease. What a Layman should Know about It. By Lawrence F. Flick, M.D. Philadelphia: David McKay. 1903.

A Manual of Operative Surgery. By Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., F.R.C.S. New Edition, Revised by the author and Jonathan Hutchinson, Jr., F.R.C.S. In two volumes. Vol. I. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1903.

The Principles and Practice of Hydrotherapy, a Guide to the Application of Water in Disease, for Students and Practitioners of Medicine. By Simon Baruch, M.D. Second Edition, revised and enlarged. Illustrated. New York: William Wood & Co. 1903.

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Original Articles.

PARASYPHILITIC AFFECTIONS,

OR REMOTE EFFECTS OF SYPHILIS.[1]

BY ABNER POST, M.D., BOSTON.

In the opinion of Professor Fournier, syphilis is responsible not only for a multitude of manifestations undeniably syphilitic both in origin and nature, but also for a number of other manifestations which are not at all syphilitic in nature but are nevertheless syphilitic in origin; that is, they are produced by syphilis or under its influence. For these manifestations Professor Fournier has proposed the name *para*syphilitic, which may be understood to mean proceeding from syphilis without being syphilitic. The term remote effects of syphilis is explanatory but not exactly synonymous.

These manifestations demand attention for two special reasons: First, they are very numerous, and second, they in great measure defy treatment.

Under the name of parasyphilitic affections we must include: The pigmentary syphilide; acute hystero-neurasthenia of the secondary period; divers neurasthenic manifestations of a more advanced stage; hystero-epilepsy; tabes; general paralysis; a special form of epilepsy; and a special form of muscular atrophy, and, for hereditary syphilis: Numerous general or partial atrophies; organic malformations, notably dental malformations; arrest or retardation of development, physical or mental; infantilism, perhaps dwarfism; congenital inaptitude for life; rickets; hydrocephalus; certain cases of meningitis; perhaps certain cases of true epilepsy; certainly juvenile tabes. These manifestations are not cured either by mercury or the iodides.

Two principal characteristics seem to establish a well-marked line of demarcation between the affections properly called syphilitic and the parasyphilitic affections. Firstly, the parasyphilitic affections are not referred necessarily to syphilis as a cause, while the purely syphilitic affections never exist without syphilis as a cause. No mucous patch or gumma exists without a pre-existing syphilis. On the other hand, general paralysis, rickets, infantilism, although so frequently the result of an antecedent syphilis, can be produced by other causes independent of all syphilitic antecedent. Secondly, parasyphilitic affections are not influenced by mercury and iodide of potassium, as are the true syphilitic affections. That is to say, these drugs do not exercise upon them a repressive or curative action so manifest that one may use it as a criterion of syphilitic character.

To explain the different conditions of these two results of syphilis, the doctrine of toxines may be invoked, and one may say that the usual accidents of syphilis are the product of a microbe, while other possible remote accidents of the same disease are the result of a toxine secreted by that microbe. Whether this explanation is correct or not, the future alone can determine.

There is a syphilitic lesion of the skin which is particularly adapted to illustrate the parasyphilitic affections. This is the manifestation known as the pigmentary syphilide or as syphilitic vitiligo or leucoderma. It is impossible to deny the syphilitic origin of this manifestation, and yet, except for its location, the same lesion may be produced by divers morbid or perhaps physiological causes totally unrelated to syphilis.

By this name of pigmentary syphilide is designated a syphilitic manifestation which consists of pigmented spots upon the skin which have been preceded by no other eruption and which occur in the great majority of cases upon the neck. They occur in the course of the first or second year, and with rare exceptions only upon females. They form without pain or the slightest local symptom, and reach their fullest development in the space of two or three weeks. At this period they consist of a series of pigmented marblings, disposed without order, anastomosing for the most part and enclosing islands of normal integument; forming a sort of network or lacework with large meshes upon the neck. These spots present no other abnormality than the hyperpigmentation; they show neither redness, swelling, thickening nor desquamation. As to color, they vary from the faintest yellow to a dark brown. Very often they show simply the tint common to necks which have not been recently washed. When the bearers of them first notice these spots, they believe that their necks need washing, and it is only after various trials that they become convinced that the discoloration is really in and not on the skin.

Usually the enclosed skin, although it appears from its position to be deprived of pigment, is normal. The network of pigmentation may surround the neck evenly or be more marked in spots. Usually it is more marked upon the lateral surfaces. Rarely it is seen upon the upper part of the thorax or even on the face. Its persistence is great — a year or two, or even longer. It persists usually after other symptoms have disappeared and the patient has ceased to visit the physician, but it finally disappears.

These abnormalities in pigmentation constitute lesions which, derived from syphilis, do not belong exclusively to syphilis and which are refractory to antisyphilitic remedies. They serve as a type of the curious pathological conditions which are grouped under the name of parasyphilitic affections. In the adult, these phenomena, which it is proposed to call parasyphilitic, are mostly concerned with the nervous system. In their consideration it is not the intention to intrude in the least on the ground of the neurologist, but simply to complete the catalogue of parasyphilitic affections.

The first of the series of nervous phenomena is

[1] This paper is practically a condensation of Professor Fournier's book — but a certain freedom in the use of the material and certain comments and quotations from other sources make it impossible to call it simply a condensation. It was prepared originally as a lecture to the Fourth Class in the Medical School of Harvard University.

neurasthenia. These cases differ in nothing from ordinary cases of neurasthenia, with which syphilis has nothing to do. How, then, connect them with syphilis? Simply that they occur too often to be simply a coincidence and because the condition is sufficient to provoke the result:

(1) By the debilitating, depressing, anemic action which it exercises upon the whole economy;

(2) By the profound influence which it exercises upon the nervous system;

(3) And also by its action upon the mind in the terror and despair which it brings to some individuals.

It must be remembered that syphilis shows a predilection towards the nervous system. Of the cases of late syphilis, cases which may properly be called tertiary rather than parasyphilitic, because they are due to distinctly syphilitic lesions and are amenable to treatment, fully one-third are lesions of the nervous system. It is unnecessary to enumerate all the forms which neurasthenia may take — one of the most important to recognize is that which simulates tabes and may be designated as neurasthenia-pseudo-tabes. In it the patellar reflex, the pupillary reflex and the functions of the bladder are unchanged.

Syphilophobia. — The chronic forms of syphilitic neurasthenia are sometimes complicated by a special symptom. This is a hypochondriacal preoccupation known under the name of syphilophobia or syphilomania. There is a class of syphilophobiacs who have never had syphilis but only the fear of it. Of course the latter class is not included in this account.

There are certain syphilitics whose whole mind is concentrated upon one single object, namely, syphilis. They exaggerate its dangers and its possible consequences. For them syphilis becomes a disease which is never cured whatever one does, a disease which ends necessarily in the most lamentable catastrophes, such as caries of the bones, the destruction of the nose or paralysis. It is a monster which combines all the sufferings which may affect the human race. In this condition they see syphilis everywhere. Everything which happens to them is syphilis. Some go so far that even anatomical peculiarities hitherto unnoticed arouse their suspicion. The papillæ of the tongue become syphilitic growths. The lacunæ of the tonsils are syphilitic ulcerations. It is fortunate if to syphilophobia is not added mercuriophobia. In that case the unfortunate finds himself between two foes, if he escapes the one he will be the victim of the other. But this combination is rare; usually the syphilophobiac believes in mercury. Such manifestations are temperamental in some measure, occurring in excitable and apprehensive individuals. Sometimes, however, they prove to be the initial symptoms of graver forms of disease.

Parasyphilitic hysteria is simply a hysteria which manifests itself under the influence of syphilis as an exciting cause, but which is simply a hysteria like other hysterias. Syphilis plays the same rôle as in other hysterias does a traumatism, or an infectious disease. Such a connection between syphilis and hysteria has been observed by others than Fournier. Taylor writes:

"In some exceptional cases in women, a mild and temporary aberration of mind is observed in the form of hysteria, emotional disturbances, hallucinations, delusions and morbid impulses. In men there may be present mild or severe stupor, delirium and even mania."

The really important — the most important members of the parasyphilitic group as sequels of acquired syphilis — are locomotor ataxia, general paralysis and epilepsy.

The question in regard to tabes is no longer whether syphilis may cause it, but whether other infections or intoxications can also produce it.

In the article on General Paralysis in the *Nouveau Dictionnaire*, published in 1885, the word syphilis is not even mentioned in the chapter on Etiology. Since then there has been described a pseudo-general paralysis due to syphilis. Without discussing the question whether this division is right or not, the present reference is to true general paralysis, characterized by a prodromic stage, marked by certain changes of character — afterwards by a stage in which two orders of symptoms occur:

First. Symptoms called somatic: muscular trembling of the tongue, face, hands; modification of the handwriting; slurring speech; alteration of pupils, reflexes and gait; apoplectiform and epileptiform attacks.

Second. Psychic troubles; progressive enfeeblement of the intellect; diminution of the memory; either melancholy, depression, hypochondria or exaggeration of the personality, personal satisfaction, delirium of grandeur.

Finally, a terminal period of dementia, physical and moral decline, and death.

Whether syphilis has or has not any causal relation with general paralysis is the first question. Considering the frequency of syphilis in the antecedents of general paralysis, very widely different statistics, varying from 4 to 5 in 100 to 80 or 85 in 100, have been produced. The proper way to consider such widely varying figures is not to take the mean, but to consider the reliability and value of the different sets. Statistics which give only 4 or 5 cases of syphilis in 100 persons can hardly be of value, as the proportion of syphilis in the general population is larger than that. In Professor Fournier's opinion, at least 15 cases of syphilis will be found in any 100 males taken at random.

Professor Fournier draws attention to the frequent association between tabes and general paralysis; to the multiplicity of symptoms common to the two maladies; to the frequent combination of the two morbid types; to their similarity in evolution, in termination, in resistance to therapeutic agents. Such reasons seem to indicate that tabes and general paralysis are two topographical manifestations of one and the same malady. When it locates itself exclusively or predominantly upon the cord, it constitutes tabes; when it locates itself upon the brain, it constitutes general paralysis; when it affects both cord and brain, it constitutes a hybrid type, to which the

name cerebro-spinal tabes would be applicable. If these two diseases are so closely related that they are sometimes confounded, that they bid fair to be at some time united as simply different manifestations of the same pathological entity, they must have the same relations to syphilis as a cause.

Epilepsy follows syphilis frequently, or at least epileptiform attacks are symptoms in the evolution of a cerebral syphilis — as such they are the direct results of syphilis and to be classed with other tertiary lesions, but occasionally there occurs an epilepsy not conjoined with other syphilitic lesions, which Fournier believes should, in our ignorance of its true nature, be classed with parasyphilitic affections.

A curious form of progressive muscular atrophy described in 1893 by Raymond [3] deserves a place in this category. Clinically it is a progressive muscular atrophy of spinal origin tending to become general and differing from the classical cases in two principal symptoms, accentuated pains and localized paresis serving as prelude to the involvement of each muscular group. In four cases described by Vulpian and Raymond an antecedent syphilis existed in each.

Antisyphilitic agents exercise no influence upon the disease. In the only autopsy there was nothing specific; nothing which might not be found in cases perfectly free from syphilitic taint.

One case mentioned may be briefly summarized as follows: A young man of twenty-five contracted syphilis in 1874. He apparently recovered, but in 1883 was attacked by an ulcerating syphilide. In 1885 his nervous affection began under the form of lancinating pains in the right shoulder, which were taken for rheumatism. Soon afterwards appeared cramps and intermittent contractions in the fingers and hand of the right side. The action of writing became painful, difficult, almost impossible. In 1889 a new symptom, diplopia, appeared suddenly and persisted for two months. From that time the nervous affection was marked by two sets of symptoms: painful phenomena, consisting of lancinating pains in the posterior cervical region, the right arm and the shoulders; and paresis, almost paralysis, affecting divers localities; successive paralysis of all the fingers of the right hand, which began to grow thin; paralysis of the right vocal chord and a muscular atrophy gradually involving additional parts up to generalization. For a certain time the atrophy remained localized in the right upper limb and the posterior-superior region of the trunk. Afterwards it invaded the trunk, the left arm, the legs, the diaphragm, the muscles of the glottis. Little by little the patient was changed to a living skeleton. Dyspnea, dysphagia, aphonia, difficulty of mastication, followed, while the intelligence was preserved. He finally died of asphyxia, in April, 1890.

The autopsy revealed: Thickened medulla, atrophy of the anterior roots, profound alteration of the anterior cornua, with signs of a diffuse and intense vascular myelitis.

[3] Bull. et mém. de la Soc. méd., des hôp., Paris, 3 Fev., 1893.

There is also a series of affections which may at some time be included in the category of parasyphilitic diseases, though our knowledge of the relationship is as yet too small to make any such classification with certainty,— among which one may include the following:

(1) Diabetes, which occurs so often in relation with syphilis that it seems as though there must be something more than an accidental connection.

(2) Hemoglobinuria.

(3) "Auricular tabes," that sudden form of deafness which resists all treatment.

(4) Certain dermatoses of the tertiary period, described by Fournier under the name of Tertiary Erythema.

(5) Perhaps certain forms of buccal leucoplasia.

In the fetus, in addition to its own proper manifestations, syphilis produces troubles of another order — to which may be applied the new term parasyphilitic affections:

(1) It diminishes vital resistance.

(2) It hinders the development of the embryo.

(3) It gives place to certain failures to reach perfection.

One of the first effects of syphilis upon the products of conception is a polymortality. Of the children who thus perish, not all show actual syphilitic lesions. Many seem to die simply from inability to live; something that may be called *fetal cachexia* or an *inaptitude for life*. Hereditary syphilitics often die without having any anatomical reason for dying.

Upon many of the children that live we find a curious retardation in development. They are backward in growth, in the evolution of their teeth, in learning to walk, in the signs of puberty, in the growth of the beard. Every one knows that at adult age hereditary syphilitics remain, not always but often, little men and little women, reduced in all proportions so that at eighteen or twenty they seem like children. In one word, that which is called infantilism is one of the most characteristic traits of hereditary syphilis. In the same way hereditary syphilis may cause certain partial dystrophies of certain organs, as of the testicle, the breasts, the ovaries, or the bones; or of the brain, as in certain children of backward development, imbeciles and idots.

A good example of arrest of development in a single system is found in the dental malformations of heredo-syphilis.

In the first place there is a notable retardation in their general evolution, the milk teeth beginning to appear only at the tenth, twelfth, fifteenth month, or even later;

(2) Dental malformations, usually symmetrical, are very common, especially in the permanent set, of which the teeth known as Hutchinson's present the most characteristic and best-known example;

(3) Microdentism, or dental dwarfing, and

(4) Unusual vulnerability of the dental system are often observed.

Can infantilism go further yet and produce dwarfs? In other words, is heredo-syphilis the

cause of dwarfs? Fournier hastens to answer that he does not know, but without special research upon the subject two cases have come to his knowledge which seem to call for an affirmative answer.

His first case is one of a dwarf issue of parents who show nothing abnormal in figure, constitution or health. They are in easy circumstances, and all causes of depression are wanting. But the father had syphilis but a short time before he was married, and Professor Guyon believes it to be in all probability the cause of the child's deficient stature.

The second case is that of Bébé, the celebrated dwarf of King Stanislas I of Poland. When born he weighed about 15 oz., and his first cradle was an old shoe half filled with cotton. At fifteen he had attained his growth, and weighed nine pounds and a half. He died of senility at twenty-five. His intelligence was poorly developed. He could never be taught to read.

His skull, preserved in the Medical Museum in Paris, shows bosses upon the two parietals, the results of gummy osteomata, which correspond in seat, perfect symmetry and exact limitation to the two parietals exactly to the lesions of hereditary syphilis described and figured by Parrot.

These two cases would seem to show that the dystrophic influence of heredo-syphilis may be carried so far as to produce dwarfs — but certainly two cases are not sufficient to establish that proposition, and it may very well be true that if syphilis is a cause, it is but one of the causes which may produce dwarfs.

Fournier believes that syphilis constitutes one of the remote and occasional causes of certain congenital malformations — spina bifida, hare-lip, cleft palate, microcephalism.

Rickets is said to show itself with frequency in the subjects of congenital syphilis. Certainly rickets cannot be regarded as a late stage of hereditary syphilis as was claimed by Parrot. It occurs in animals and in children in whom there is no suspicion of syphilis. But syphilis may very properly be regarded as one of the predisposing causes of rickets.

So far only the arrest of physical development has been mentioned, but a possible consequence of hereditary syphilis consists in a similar arrest of intellectual development; certainly hereditary syphilis sometimes gives rise to veritable idiots.

Hydrocephalus is another pathological condition which sometimes owes its origin to hereditary syphilis. This assertion rests —

(1) Upon the frequency with which hydrocephalus shows itself in the issue of syphilitic parents. Fournier has himself observed more than thirty such cases in his private practice.

(2) In the family conditions under which hydrocephalus presents itself.

The following two cases are from Boerensprung:[3]

First case:

First pregnancy, infant born dead at eight months.
Second pregnancy, infant born dead.
Third pregnancy, infant born dead.
Fourth pregnancy, hydrocephalus, dead at five months.
Fifth pregnancy, stillborn.
Sixth pregnancy, syphilitic infant.
Seventh pregnancy, syphilitic infant.

Second case (14 pregnancies):

First, child born dead at seven months.
Second, child syphilitic, died at one year and a half.
Third, hydrocephalus, died at one year and a half.
Other pregnancies produced children either dead, syphilitic or apparently healthy.

The following is from Jonathan Hutchinson:

First infant syphilitic and hydrocephalic.
Second infant died at ten months.
Third infant born dead and macerated.
Fourth infant syphilitic and hydrocephalic.

Fournier has seen three hydrocephalic children in one syphilitic family.

Dr. F. Astors of Marseilles believes that there are two classes of hydrocephalic cases resulting from hereditary syphilis:

(1) Hydrocephalus of syphilitic nature, resulting from syphilitic lesions.

(2) Hydrocephalus of syphilitic origin, resulting from a disturbance of nutrition and coinciding with certain arrests of development in the brain.

It is this second class only that can be classed with parasyphilitic affections.

Meningitis is a frequent cause of death in syphilitic infants. Some of them are certainly syphilitic. They are in a measure amenable to antisyphilitic treatment, and, as shown by autopsy, they are due to syphilitic lesions.

In others no syphilitic lesions are found, and Fournier believes that they belong in the same category with the parasyphilitic affections.

The history of certain families is instructive in this connection, of which only two, the most striking, are given:

First family: Father and mother both syphlitic; first child hydrocephalic — dead; second child meningitis — dead.

Second family: Father syphilitic; mother healthy; twelve pregnancies. Third infant hydrocephalic; fifth infant stillborn; sixth — living — syphilitic, Hutchinsonian teeth, infantilism, — epilepsy at the age of fifteen, dementia paralytica; seventh and eighth abortions; eleventh deaf mute, epileptic and hydrocephalic; twelfth died of meningitis.

Little's disease (spastic paralysis, cerebral infantile paralysis) is also included in the category of parasyphilitic affections.

It is needless to describe this disease, but it is necessary to inquire as to the evidence that refers it to a syphilitic origin. Fournier gives two cases. In one the child was affected with spastic paralysis of all four members. He also bore evidence of hereditary syphilis, and his father also gave a history of syphilitic accidents.

In the second case the antecedent history of syphilis in the father was known. The second child was seen with typical Little's disease. The

[3] Die hereditäre Syphilis, Berlin, 1864.

first child, already dead, was said by the parents to have been exactly like the second, and their statement was confirmed by the physician who had charge of it.

Furthermore, Little's disease is the result of a lack of development in certain portions of the nervous system, and lack of development in other portions of the economy are absolutely common in hereditary syphilis.

It is interesting to see what has been said on this subject by the writers previous to the time when views embodying parasyphilis were brought forward.

Bradford and Lovett have devoted considerable space to Little's disease. Concerning its etiology, they consider together three groups of cases — hemiplegia, spastic paralysis, incoordination, or idiocy — under the one head of cerebral paralysis of children.

As a cause they reject difficult labor and injury from forceps.

They report from Little that a large number of these cases are born prematurely, and say that premature labor has not received due attention as a causative factor. Infectious diseases have presented several cases, and syphilis is mentioned as undoubtedly a cause.

By way of parenthesis, it may be added that syphilis is a frequent cause of premature labor.

To quote a paragraph from their section on pathology: "The pathology of the condition is, in short, a lesion of the motor tract of the brain with consequent atrophy and retarded development of the affected portion and descending degeneration of the pyramidal tracts and lateral columns of the cord; from the extensive atrophy found in young children at autopsy, it seems that unquestionably sometimes the disease originates in defective development of the nervous centers, especially the pyramidal tracts, rather than in an acute cerebral hemorrhage or embolism."

These authors lay particular stress upon two etiological factors — premature labor and defective cerebral development, both of which factors are very commonly to be referred to a common source, namely, syphilis.

A question of great interest is raised as to the possibility of hereditary syphilis causing the group of nervous symptoms already mentioned in the category of parasyphilitic affections due to acquired syphilis, or, in other words, does there exist a neurasthenia, an hysteria, an epilepsy due to hereditary syphilis as an exciting cause?

Our knowledge allows only an imperfect answer. In the first place, the study of late congenital syphilis is of very recent date, and the study of the relation of syphilis to the so-called parasyphilitic phenomena is but just begun.

Professor Kowalewsky of Charchow believes in a neurasthenia of hereditary syphilitic origin.

There are many cases of hysteria in the children of syphilitic parents, but the relation of cause and effect is not so sure. And, also, of epilepsy it may be said of certain cases in heredo-syphilitics that while many of them are due to syphilitic lesions, there are many others in which the convulsive seizures are the only symptoms, and in which it is impossible to say whether there are syphilitic lesions, whether syphilis is a provoking cause, or whether syphilis bears no relationship.

One can feel more certain as regards tabes and general paralysis. There are some very interesting cases illustrating the possible hereditary origin of tabes.

One case concerns a woman of thirty already profoundly ataxic. The tabes began about the age of twenty. She was free from all personal contamination of syphilis, but she furnished a series of particulars which left little doubt as to the existence of an hereditary syphilitic infection. Her father was said to have died from the effects of syphilis contracted as a young man. Her mother had had numerous premature births that various physicians had attributed to the disease of the husband. The patient was herself affected with a grave and chronic disease of the eyes at the age of three or four, which lasted fifteen to eighteen months, and from which an opacity of the cornea still persists.

Another case is from Remak, and relates to a case of tabes occurring in a child, certainly an hereditary syphilitic, of which the following is a summary:

Marie D., aged twelve, born of a syphilitic father and a mother who is now suffering from a frontal periostitis.

There have been eleven pregnancies, of which four were abortions, three children who died during the first year, three children survived, of whom Marie is the eldest. At nine there was an invasion of tabetic symptoms — incontinence of urine and later of feces, occasional loss of consciousness, occipital cephalalgia, ptosis, diplopia; at present, atrophy of the optic nerves, girdle pains, lightning pains, diminution of sensation to touch and to pain in the lower extremities, paresthesia, sensation of cold, abolition of the patella reflex, gastric crises.

It is only within the last years that we have concerned ourselves as to hereditary syphilis, *apropos* of the etiology of tabes. It will be necessary hereafter to ask information as to a possible inherited syphilis, as one nowadays asks for personal antecedents.

In regard to general paralysis, M. Regis has collected fourteen cases of general paralysis in youth (from thirteen to nineteen years). Of this number, six were derived certainly, and one, perhaps two, probably from hereditary syphilis.

The following case is taken from Clouston :[4]

Girl of fifteen years. Father syphilitic. Paternal uncle dead of general paralysis. Mother's paternal cousin insane, afterwards demented. Twelve pregnancies, three stillborn, three children dead, one of hydrocephalus and one of meningitis. Six children living, of whom one is a deaf-mute, epileptic and hydrocephalic. Personal antecedents: Habitual good health; intelligence good; indolent; typical Hutchinsonian teeth; breasts rudimentary; never menstruated; aspect infantile. From

[4] Edinburgh Med. Journ., 1891.

six to nine years, three or four epileptoid attacks annually. At about fourteen to fifteen, sudden loss of consciousness, followed by prostration for two days. Two other similar attacks just before the beginning of the disease. All at once diminution of activity, indolence, indifference, mental enfeeblement, afterwards hesitating speech, difficulty in walking and muscular weakness. Admitted to the Edinburg Asylum at the age of nineteen, with the following symptoms: Dementia paralytica without delirium, physical signs very accentuated; nystagmus; disseminated opacities of peripheral coroiditis, which Argyle Robertson considered a manifestation of hereditary syphilis; coldness of the extremities with varying color, red to blue; spots of gangrene with erysipelas upon the feet.

This must not be considered as a final account of the subject of parasyphilitic affections. It is only a first attempt. It may be necessary in the future to add to or subtract from it. Perhaps the chapter can never be fully written until the bacteriology of the disease is known and enables us to distinguish between diseases which are syphilitic by nature and those which are parasyphilitic.

Certainly the consideration of the remote effects of syphilis increases considerably the gravity of its prognosis and gives an additional reason for the more careful study of the disease and for more careful attempt to control or suppress it.

SOME OBSERVATIONS UPON BLOOD PRESSURE IN THE INSANE.

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THE literature on the subject of blood pressure is increasing rapidly, and much pleasure and profit might be derived from reviewing the major part of it, but I will resist the temptation and merely call your attention to certain articles which have a direct bearing on the results which follow. For a long time it has been conceded by some that the blood pressure was increased in depressive states and decreased in excited conditions. In 1900 Maurice Craig in an article entitled "Blood Pressure in the Insane,"[1] says: "We may now, I think, take it as accepted that in states of acute mania the blood pressure is low, whereas in the majority of cases of melancholia the blood pressure is raised; in other words, that with the affective disorders of the mind there is an alteration in the tonicity of the vasomotor system." Pilcz[2] reached the same conclusion, and in one of his cases of circular insanity the blood pressure varied from 60 mm. in the excited state to 160 in the depressed period. It has been found, however, that in agitated melancholia the blood pressure is low, and all the evidence seems to indicate that a low blood pressure in the insane accompanies motor restlessness. The article by Dr. Craig, from which I have quoted, and another by Dr. Henry L. K. Shaw[3] are two which I have found most interesting from the standpoint of the alienist. The latter contains a number of references to foreign literature, to several of which I shall direct your attention. Pilcz found the blood pressure normal in the early stages of paresis, but low in the terminal stage. Heim[4] found a high blood pressure in neurasthenics and hysterical children, and considered this a diagnostic point. The above references concern the points which will be of most interest to us in the consideration of the observations which form the subject of this paper. The other works to which Shaw refers deal with the effect of therapeutic measures upon the blood pressure, or with the history of the various methods of observing it.

Mention should be made of the investigations made at the Royal Asylum, Aberdeen, by Drs. Bruce and Alexander on cases of melancholia and of mania. Justice cannot be done to their work in a brief abstract, and I therefore append references to their published writings.[5]

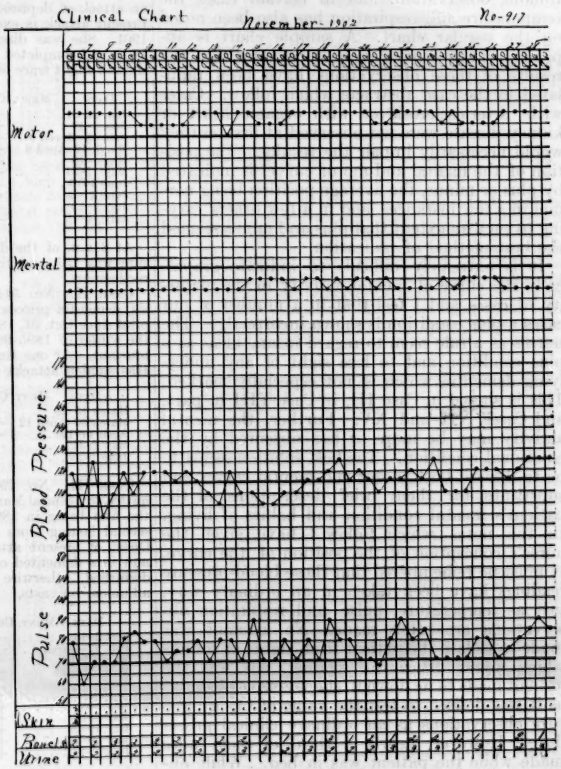
Early in 1902 Dr. Harvey Cushing of the Johns Hopkins Hospital introduced to us his modification of the Riva-Rocci apparatus for determining blood pressure, and presented us with an instrument. Dr. Cushing's modifications are merely mechanical, and do not affect the principle of the apparatus. I wish to especially call your attention to the convenience of the Riva-Rocci instrument. Shortly before we began using it we were having constructed the elaborate apparatus of Mosso, which one might say requires a room to itself, and has as another disadvantage to its use that a number of patients are in no condition to be brought to this room. A number of those that might be would endanger the rather expensive apparatus. The form of the Riva-Rocci which we have used we have put together ourselves, and I am sure that three dollars will quite cover the cost of each instrument. It consists first, of a narrow rubber bag with linen covering with hook and loops, by means of which it is secured about the patient's arm. This bag communicates by rubber tubing with one arm of a glass T inserted in the cork of a wide-mouthed bottle, which latter is partly filled with mercury, and which has a straight glass tube with millimeter scale attached also passing through the cork, and from this the degree of pressure is read. The other arm of the above-mentioned T is connected by rubber tubing with a pressure bulb, such as is used on a Paquelin cautery. There is also a branch from the first tubing closed by a pinch cock, by means of which the air is allowed to escape from the instrument after the observation has been made. To operate the apparatus, the arm band is fastened about the patient's arm above the elbow, the radial pulse is palpated, and air is forced into the apparatus by means of the pressure bulb. The height

[1] Brit. Med. Journ. Sept. 22, 1900, No. 2073, p. 184.
[2] Wien. klin. Wchnschr., No. 12, 1900, quoted by Shaw.
[3] The Tonometer and its Value in Determining Arterial Tension. Med. News, vol. lxxviii, p. 372.
[4] Deutsche med. Wchnschr., No. 15, 1900, quoted by Shaw.
[5] Journ. of Ment. Sci., October, 1900. Lancet, No. 4069, Aug. 24, 1901. Lancet, No. 4114, July 5, 1902.

of the column of mercury at which the pulse disappears is noted, the pressure carried slightly beyond, the air slowly allowed to escape, and the height of the column of mercury at which the pulse returns is noted, and the mean of these two observations gives us the systolic pressure. Some observers only note the point where the pulse disappears, others only the point where it reappears. Either is correct, but taking both secures accuracy. Recently Dr. Cook [6] has described this instrument in a less homemade form, and discusses its manipulation very fully.

Stanton [7] has devised a very similar apparatus, which seems to have certain advantages over the Riva-Rocci, though practically differing from it only in the width of the arm piece and in using a foot pump to obtain the necessary air pressure. By means of his apparatus he is able to obtain both the systolic and diastolic pressures, and from them calculate the mean pressure. I have tried his method with the Riva-Rocci apparatus with an assistant at the air pump, but was not able to obtain satisfactory readings of the diastolic pressure, due, I think, to the narrow arm piece, which Stanton considers the great defect of the Riva-Rocci apparatus. Jackson [8] has compared the Riva-Rocci with the Gaertner, and finds that they give uniform results except in cases of arteriosclerosis, where the former instrument reads too high. In regard to the presence of arteriosclerosis as a complicating factor I wish to call your attention to a very interesting article by Dr. Clifford Allbutt, on "The Rise of Blood Pressure in Later Life," [9] in which he says: "In sufferers from arteriosclerosis — I use the name arteriosclerosis loosely for present convenience — exorbitant pressures are often but by no means constantly found. Between disease of the arterial tree and blood pressure there is no direct relation in arterial disease, even in the extreme degree of it normal or relatively low pressures are commonly observed; but I often notice that in cases of arterial degeneration the reading extends uniformly over a wider range of the scale, say, over 15 or 20 units, in which cases I record the mean figure and the extremes. In denying that elevation of blood pressure depends directly upon arteriosclerosis, I have stood alone for some years against the high authority of Von Basch and many others; but I think that some recent observers now admit the validity of my contradiction, and the matter is one of cardinal importance."

Since our introduction to the Riva-Rocci instrument we have taken a great many blood-pressure observations with a view of determining the value of such observations in mental diseases both as an aid to diagnosis and to treatment. It is the object of this paper to present the results which we have hitherto obtained. At first a number of single observations were made on a number of patients, but we soon realized that by such methods accurate results could not be obtained, and it was thought if we



Showing blood pressure, motor and mental chart reduced four times. Since the preparation of this paper, these charts have been amended so that the lines above and below the normal (motor and mental) lines signify a definite condition (quiet, restless, excitement, etc.), but so far an entirely satisfactory arrangement has not been obtained.

[6] Journ. Amer. Med. Assoc., vol. xl, p. 1199, May 2, 1903.

[7] Univ. of Penn. Med. Bull., February, 1903.

[8] Bost. Med. and Surg. Journ., vol. cxlvii, p. 223.

[9] The Lancet, No. 4149, vol. clxiv, March 7, 1903.

regularly measured the blood pressure of several cases during the whole course of their mental alienation with the changes which probably took place as recovery, or other change occurred, that we would have more instructive and more accurate data. It will be remembered that the Riva-Rocci apparatus shows the systolic pressure, and this, I think, serves our purpose sufficiently well.

As we did not wish to go to the expense of having charts for blood pressure made until we became satisfied with the form, we have used square ruled paper, which the nurses have divided as indicated. Also, for convenience, the observation has been recorded on a scale of fives, which gives approximate results. Should we consider the plan hitherto pursued sufficiently valuable to continue, we will have the blood pressure scale divided into millimeters. We have had charts made of the blood pressure, mental and motor condition, the condition of the skin, and the pulse in all the cases which have been under continuous observation, and in certain cases the temperature and respiration has also been noted on the regular chart. A sample chart is appended. For convenience of consideration the results of these observations have been tabulated in the case abstracts which follow. Cases with arteriosclerosis or with organic heart or kidney disease were not observed at first, as they would necessarily impair the results. The position of the mental and motor curves is indicated by plus or minus, the average position being normal in a few instances, and in a few others varying to such an extent that plus and minus seemed the best method of indication.

It is extremely difficult to indicate graphically the curve of mental activity in the majority of cases, and I feel that in a number of our cases a plus condition is shown incorrectly. The nurses as a rule seem to regard insane ideas as a plus condition and to lose sight of any underlying dementia which is not especially marked. This is shown in Case III, in Case VIII in part, and Cases XII and XV. Further, the mental activity may be more or less obscured by the emotional condition. The best solution seems to be to discard both motor and mental curves and substitute for them brief descriptions of the patient's mental condition and habits of living. In the notes which follow I have given the nurse's conception of the position of the curve. It must be remembered that these blood-pressure readings have been taken in an ordinary way, just as temperature, pulse and respiration observations are often made. No attempt was made to isolate the patient from sights or sounds which might affect the reading, nor was the patient made to lie down if she was up and about, as it was desired to test the value of blood pressure observations as an ordinary clinical procedure. However, nearly a third of them were made while the patient was in bed. While observers differ as to the effect of posture on the blood pressure, the consensus of opinion seems to be that we find a higher blood pressure when the patient is in a sitting position than in a recumbent one. The factor of posture may be ignored in a given case when all observations are made when the patient is in one position, that is, either sitting or lying, but in comparing cases this factor should be considered. One conclusion to which we came was that the continuous taking of the blood pressure has but little value in the majority of mental cases, and the plan has been adopted of taking it for a limited period, then discontinuing it and taking it again for another period whenever we felt there was a change in the motor or mental condition of the patient. I believe that the average of a week's observations give as accurate a measure as when they are continued for a longer period. Frequently the first two or three observations are higher than the others, due possibly to an element of fear in the patient, so that I am not satisfied that one or two accurately show the blood pressure.

CASE I. No 824. Woman aged twenty-five. Had an attack of depression September, 1897, to May, 1898. Present attack is excitement, and began about May 10, 1901. She was discharged from the hospital July 19, 1902, and completed her recovery at the seashore. Urine showed slight trace of albumen, no casts. Heart normal.

DATE	MENT. CURVE	MO. CURVE	AV. B. P.	NO. OBS.
Jan. 22–31	+	+	101.6	38
Feb. 1–17	+	+	109.5	57
Feb. 18–March 9	+	+	110	78
March 10–April 8	+	+	106.4	101
May 1–16	+	+	117.78	61
May 17–31	+	+	109.66	59
June 1–10	+	+	111.12	40
June 11–30	+	+	110	56
July 1–15	+	+	111.5	60
July 16–19	+	+	109.5	12

At 8 A.M. of the day of her discharge the blood pressure was 135, and there was a greater degree of motor restlessness.

CASE II. No. 544. Woman aged twenty. Diagnosis, dementia præcox. Had been an inmate of the hospital since Oct. 31, 1898. Her mental trouble dated from the winter of 1895–96. Heart irregular and shows hemic murmur. At one time urine showed albumen, no casts. Has sudden attacks of violence.

DATE	MENT. CURVE	MO. CURVE	AV. B. P.	NO. OBS.
March 15–29	—		124	15
March 30–April 12	—		131	14
April 14–19	—		125.8	6
May 1–31	—		120	31
June 1–28	—		118.8	22

CASE III. No. 798. Woman aged twenty-six. Admitted to hospital March 29, 1901. Present is third attack, the first being in 1890 and lasting several months, the second lasting from October, 1892, to December, 1893. Onset of present attack was about Dec. 25, 1900. Is now in a demented condition. Heart rhythm somewhat disturbed, otherwise negative. Urine showed trace of albumen, no casts.

DATE	MENT. CURVE	MO. CURVE	AV. B. P	NO. OBS.
Feb. 1–16	—	+	141.93	15
Feb. 17–March 4	—	+	149.87	16
March 5–19	—	+	146	15
March 20–30	+	+	135	19
March 30–April 8	+	+	141	18
April 9–18	+	+	137	16
May 5–8	+	+	136	7
May 9–18	+	+	133	19
May 19–28	+	+	133	20
May 29–June 7	+	+	129	20
June 8–17	+	+	130	20

CASE IV. No. 924. Woman aged forty-one. Admitted to the hospital April 24, 1902. Shows depression and mental confusion with a good deal of motor excitement. Patient had a similar attack at twenty-one years, lasting three months. Had been mentally unstable ever

since. Her present illness began eleven days before admission.

DATE	MENT. CURVE	MO. CURVE	AV. B. P.	NO. OBS.
April 30–May 12	none	—	154	25
Oct. 9–31 . . .	+	—	116.63	46

Discharged from the hospital Jan. 19, 1903, improved.

CASE V. No. 917. Woman aged twenty-nine. Mental symptoms began February, 1902. Patient was admitted to the hospital April 14, 1902. Was removed against advice June 9, 1902, and readmitted July 11, 1902. Patient was depressed, emotional and exhibited great motor restlessness. Heart negative. No arteriosclerosis. Urine negative.

DATE	MENT. CURVE	MO. CURVE	AV. B. P.	NO. OBS.
July 16–Aug. 7	none	+	108	45
Aug. 7–31 . . .	none	+	109.6	45
Aug. 31–Sept. 21	—	+	112	45
Sept. 22–Oct. 13 .	—	+	118.7	39
Oct. 14–Nov. 5 .	—	+	118	46
Nov. 6–28 . . .	—	+	113	47
Nov. 29–Dec. 21 .	—	+	119.5	41
Dec. 22–Jan. 13 .	—	+	115	30
Jan. 14–Feb.3,	normal,	nearly normal	128	40

Patient was discharged Feb. 3, 1903, much improved.

CASE VI. No. 977. Woman aged twenty-seven. Has appearance of being ten years younger. Patient had typhoid fever at fifteen and twenty-four. Was brought to the hospital Sept. 27, 1902, from Danville Sanitarium, where she had been since March, 1902. Is in condition of incomplete dementia, with attacks of sudden violence. Heart negative. No arteriosclerosis.

DATE	MO. CURVE	MENT. CURVE	AV. B. P.	NO. OBS.
Sept. 30–Oct. 21	normal	+	125.54	37
Oct. 22–Nov. 12 .	+	+	123.42	38
Nov. 13–Dec. 4 .	—	—	113.72	43
Dec. 5–26 . . .	—	—	114.75	41
Dec. 27–Jan. 17 .	—	—	117.2	27

CASE VII. No. 979. Woman aged twenty-six. There is an indefinite mental history dating back six years to the time of her graduation from the high school. She has been teaching in the public schools from that time until Jan. 1, 1902, when active mental symptoms were noticed. Was brought to the hospital Oct. 12, 1902. Heart negative. No arteriosclerosis.

DATE	MO. CURVE	MENT. CURVE	AV. B. P.	NO. OBS.
Oct. 2–Nov. 7 . .	—	—	120.6	44
Nov. 8–30 . . .	—	—	118.47	46
Dec. 1–23 . . .	—	±	127.12	37
Dec. 24–Jan. 15 .	—	+	126	39
Jan. 16–28. . . .	±	—	120	24

CASE VIII. No. 946. Woman aged fifty-one. Admitted to the hospital June 16, 1902, after attempting suicide. Mental symptoms had been noticed five weeks before admission. Had transitory delusions. Was depressed, restless and emotional, and at times much confused. Patient improved quite markedly up to a certain point where she had frequent emotional attacks, and begged to go home. Heart negative. No arteriosclerosis. Urine showed a trace of albumen, no casts.

DATE	MOTOR	MENTAL	AV. B. P.	NO. OBS.
July 16–Aug. 3 .	+	+	106	26
Aug. 4–25 . . .	+	+	114.5	40
Aug. 26–Sept. 16	+	+	124	41
Sept. 17–Oct. 9 .	+	+	125.1	39
Oct. 9–31 . . .	+	+	128.4	44
Nov. 1–22 . . .	+	+	123	45
Nov. 23–Dec. 15 .	+	±	111.47	44
Dec. 16–Jan. 6 .	+	—	115.7	37
Jan. 7–29 . . .	+	—	115.3	29

CASE IX. No. 999. Woman aged thirty-two. Admitted to the hospital Dec. 10, 1902. Mental symptoms date back two years to the birth of her last child. Depression and self-accusation were the most marked symptoms. Had twice attempted suicide. Heart negative. No arteriosclerosis.

DATE	MOTOR	MENTAL	AV. B. P.	NO. OBS.
Dec. 13–Jan. 4, '03	—	—	120.4	38
Jan. 5–27 . . .	—	—	121.34	46
Jan. 28–Feb. 19	—	—	118.24	37

CASE X. No. 988. Woman aged twenty-one. Admitted to the hospital Nov. 9, 1902. Became exalted over religious matters about a year before, since which time she has become depressed and thinks she has committed the unpardonable sin. Heart negative. No arteriosclerosis. Urine negative.

DATE	MOTOR	MENTAL	AV. B. P.	NO. OBS.
Nov. 11–Dec. 3	—	—	109.63	46
Dec. 4–26	+	—	101.74	46

CASE XI. No. 1003. Woman aged fifty. A case of well-marked neurasthenic depression. Admitted to the hospital Dec. 29, 1902, her mental symptoms dating back several months. Heart negative. No arteriosclerosis. Urine negative. Patient left hospital March 2, 1903, against advice, slightly improved.

DATE	MOTOR	MENTAL	AV. B. P.	NO. OBS.
Jan. 6–28	—	—	111.3	46
Jan. 29–Feb. 21 .	—	—	106.74	43

CASE XII. No. 1009. Woman aged twenty-seven. Mental symptoms about a year before admission, which was Jan. 15, 1903. Is well-marked case of dementia precox with incomplete dementia. Heart sounds slightly dulled. No arteriosclerosis. Urine negative.

DATE	MOTOR	MENTAL	AV. B. P.	NO. OBS.
Jan. 28–Feb. 20 .	+	+	126.13	44
Feb. 21–27 . . .	+	+	122.3	13
March 28–April 2	+	+	122.	10

CASE XIII. No. 1008. Woman aged twenty-six, admitted Jan. 15, 1903. The patient has marked flexibilitas cerea and other physical symptoms of the katatonic form of dementia precox; mentally, however, while she has shown improvement, insane ideas are pretty well marked on careful investigation, and the case is undoubtedly one of precocious dementia. Heart negative. No arteriosclerosis. Urine negative.

DATE	MOTOR	MENTAL	AV. B. P.	NO. OBS.
Jan. 28–Feb. 19 .	—	—	108.2	41
Feb. 20–March 14	—	—	108.3	42
March 15–17 . .	—	—	108.3	24

In connection with this case it is interesting to note that Anton [10] in a study of three cases of brain disease with katatonia, found low blood pressure in two of them.

CASE XIV. No. 1018. Woman aged twenty-three, admitted Feb. 25, 1903. Mental symptoms dated back about seven months, but did not become sufficiently marked to demand hospital care until about a month and a half before admission. There has been rapid retrogression, and the case is evidently one of dementia precox. Heart negative. No arteriosclerosis. Urine negative.

DATE	MOTOR	MENTAL	AV. B. P.	NO. OBS.
Feb. 26–March 20	+	—	122	43
March 21–27 . .	—	—	124.6	13

The following abstracts are from cases in which the blood-pressure observations were not carried over so long a period, and have been taken usually in cases which were not so recent or were not undergoing any marked changes, or in other words, were more or less stationary.

CASE XV. No. 655. Woman aged thirty-four, has been under care since Dec. 30, 1899. Is a well-marked case of dementia precox, with considerable motor activity. Is usually elated mentally. Heart negative. No arteriosclerosis. Urine negative. Blood pressure observed March 24–30, 1903, averaged 122.7 mm., the mental, motor and pulse curves all being plus.

CASE XVI. No. 905. Woman aged twenty-two, admitted March 18, 1902. Case is one of well-marked dementia precox, with sudden impulses. Heart shows mitral stenosis, which improved while she was under care. No arteriosclerosis. The day of admission patient's blood pressure was 140 mm., and six days later was 146 mm., the patient lying quietly in bed on both occasions. Her mental condition was depression. Blood pressure

[10] Anton G. Ueber Gehirner krankungen mit Katatonie. Mittheilung des Vereins der Aerste in Steiermark, 1902.

observed March 1–15, 1903, averaged 124.4 mm., motor and mental curves both being plus.

CASE XVII. No. 78. Woman aged fifty-six, has been in the hospital for ten years. Original diagnosis chronic mania but now in a condition of incomplete dementia. Heart negative. Arteries somewhat sclerotic. Urine shows trace of albumen and a few epithelial casts. Blood pressure taken March 8–14, 1903, averaged 139 mm., motor and pulse curves plus, mental minus.

CASE XVIII. No. 380. Woman aged forty-seven. Case of imbecility with marked auditory hallucinations causing considerable excitement. Has been in hospital six years. Heart shows systolic murmur transmitted to the axilla. No arterio-sclerosis. Urine shows trace of albumen. Blood pressure taken March 8–14, 1903, averaged 142 mm., motor, mental and pulse curves all being plus.

CASE XIX. No. 1010. Woman aged forty-six, admitted Jan. 15, 1903. Her attack began suddenly May 16, 1902, following death of her child, the patient being much run down from nursing. The first symptoms were excitement, followed by depression, which was in turn followed by a confused, agitated condition, during which she was brought to us. She at present (April 11) has improved slightly both physically and mentally. Heart negative, no arteriosclerosis. Urine negative. Blood pressure observed March 8–14, 1903, averaged 121.5 mm., motor and pulse curves being plus, the mental minus.

CASE XX. No. 947. Woman aged fifty. Admitted June 20, 1902, depression having become marked about two months before admission. Somato-psychic delusions early became prominent, and at present are the most marked symptoms. Heart shows no murmurs. Arteries are diffusely sclerotic. Urine shows a trace of albumen. At one time pulse was high tension and a course of nitrates and nitrites caused a marked change without, however, any accompanying mental change. Blood pressure was taken for the first week of March, 1903, and averaged 140 mm., motor and mental curves both being plus.

CASE XXI. No. 959. Woman aged twenty-one admitted Aug. 3, 1902. The silliness of dementia precox is most marked. At admission was in a condition of excitement, which has since subsided. Heart shows slight systolic murmur transmitted to axilla. No arteriosclerosis. Urine negative. Blood pressure observed from March 26 to April 2, averages 124.3, motor curve being plus, mental minus.

CASE XXII. No. 908. Woman aged sixty-nine, admitted to the hospital Sept. 2, 1899. Is an involution case with slight dementia. Heart and kidneys negative. No arteriosclerosis. Blood pressure observed from March 1–17, averages 127.69, motor curve is plus, mental minus.

CASE XXIII. No. 908. Woman aged forty-four; a case of epileptic insanity. Dementia is very slight. Heart shows systolic murmur transmitted to the axilla. Urine negative. No arteriosclerosis. Blood pressure observed March 1–7, averages 132.2, motor curve plus, mental minus.

CASE XXIV. No. 936. Woman aged fifty-six. Case of melancholia "agitata." Heart negative. Urine shows trace of albumen. No arteriosclerosis. Blood pressure observed March 24–30, averaged 131.6, motor curve plus, mental minus, pulse plus.

CASE XXV. No. 1031. Woman aged forty. Recurrent melancholia. Had previous attacks six and four years ago. On admission was depressed with marked motor activity. Under treatment has improved. Heart negative. Urine shows trace of albumen. Slight arteriosclerosis. Blood pressure has gradually fallen from 140 to 120, averaging 127.6 for the three weeks observed. The motor curve has gradually fallen and the mental curve has gradually increased.

While on following down the blood pressure column I am unable to find the point where there was any change sufficiently marked to be noticed, which corresponds with any mental change and on going over the charts I am also unable to find any constant ratio, either direct or indirect, between the motor, mental and blood pressure curves, nevertheless I feel that these observations have their value, and in the data given above we find the general ratio is usually the same as that found by other writers; namely, that the average blood pressure is low in motor restlessness, or in mental excitement, and high in depressive conditions, or in cases where there is diminished mental activity. The blood pressure depends on so many factors that it is not surprising if we find occasional cases in which it does not accord with the usual observations. Some other factor which we may have overlooked may have caused the changed ratio, or our own observations may be at fault. For example, in certain cases with mutism I have had great difficulty in deciding whether there was increased mental activity or not.

A dry and moist skin seems to have no effect, and I think that the cases observed by Kornfeld[11] must have been actively perspiring to have had any marked influence upon the blood pressure.

Schaeffer and a number of others have observed that blood pressure was lower in the evening than in the morning, and have considered this a physiological variation. One writer gives this daily physiological fall as the reason that patients suffering from depression usually feel better at night, and the maniacal patients are usually worse. In our own observations the daily variation has been very inconstant. The morning and evening observations have frequently been the same, and the evening pressure has been higher than the morning quite as often as the reverse.

Briefly the conclusions based upon the present study may be stated as follows:

(1) The findings of other writers that (*a*) the blood pressure is increased in depressive states and decreased in excited states; and (*b*) that the motor condition has a greater influence on the blood pressure than does the mental condition, have been confirmed.

(2) A moist skin has no especial influence upon the blood pressure, although active perspiration may.

(3) There was no constant daily variation, as has been noted by Schaeffer and others.

I feel that further conclusions are not justified by the cases presented here and others which are in a too incomplete state to justify publication. This paper will have fulfilled its mission if others are stimulated to observe blood pressure.

Too much importance should not be ascribed to this symptom. Its accurate observation has its value, and will probably have a greater value later when we have a better knowledge of how it is influenced by various bodily conditions. The general clinicians are adding to this, and we should do our part by observing how it is influenced in mental affections.

[11] Kornfeld, Sigmund. Zur Pathologie der Angst, Festschrift Dr. v. Kraft-Ebing, p. 411, 1902.

THE FORMATION OF LOOSE CARTILAGES IN THE KNEE JOINT.[1]

BY E. A. CODMAN, M.D., BOSTON.

If I should ask each one of you for a definition of "loose cartilages in the knee joint," I should probably receive a number of replies, each one of which would have able arguments to sustain it. In the first place, many would consider that "loose cartilages" referred to injured or displaced semilunar cartilages, but it is not to these that I wish to call your attention. It is on the formation of the "joint mice," cartilage-like bodies, varying in size from that of a small bean to that of an oyster, and being either free in the joint or held by a pedicle or light adhesions to the capsule. Such bodies are common enough and in many cases cause little or no trouble, while in others much annoyance is produced by locking of the joint and the production of a chronic synovitis. When this condition is reached, the patient usually comes to operation, a small incision in the capsule is made, and the mouse popped out. The result is generally a perfect cure. Now what is the origin of these bodies? There seems to be a prevailing impression that the process of formation is one of concretion comparable with the formation of biliary or cystic calculi. The nucleus is guessed to be a clot of fibrin, a bit of torn fringe or a fragment of semilunar cartilege. Another common explanation is that such bodies are originally osteophytic growths on the lips of the articular surfaces, and when broken off become "mice." Finally, certain cases have been considered actual bits of articular cartilage set free by trauma. It is this latter theory which seems to me to clearly account for the vast majority of cases, although here and there a case from one of the other causes may occur. Until I took the pains to look up the question, I had supposed that this explanation was original, but I find that it has been frequently offered before.

The observations which suggested this theory to me were as follows: In 1895, when assisting at an operation on such a case, I noticed on the face of the articular surface of the internal condyle, a stellate star in the cartilage which was somewhat smaller than the mouse, but was of the same rough shape and suggested the site of origin. Since then I have, at every opportunity, in the cases of other surgeons, looked for this scar and have frequently seen it, even when the operator himself had not. In 1900 I had a case of my own in which I demonstrated that the mouse nearly fitted its bed in the internal condyle. The case which I have to show tonight, however, demonstrated this even more conclusively, for one of the four mice which I removed was still attached like a little trap-door; another fitted its former bed exactly; and a third resembled an old scar, but was too big for it. These four mice are numbers 2, 3, 4, 5 in the accompanying illustration, and show very clearly the stages of the growth. In 2 and 3 there is as yet no concretion, while in 4 and 5 the concretion has surrounded the cancellated bone. In all these, and in fact in the great majority of such bodies, you will see that one side is of cartilage and the other of modified spongy bone. The specimens on the card are dried and the cartilage is yellow and shrunken, but in the fresh or alcoholic specimen it is white and convex. I will pass about some alcoholic specimens from the museum.

It occurred to me to try experimentally on a cadaver to knock such a chip out by a sharp blow. If you will flex your knee you will see that the patella protects the external condyle almost completely, but that the internal cartilaginous surface is exposed to violence. I found, however, in the cadaver, that a blow merely dented in the articular surface in just such a manner as a fragment is depressed in a skull fracture. With a director this fragment can be easily pried out. In every case it brings with it a lamina of spongy bone. The skiagraphs of such pieces are shown in Figs. 1 and 6. How nearly these pieces resemble the essential structure of the loose cartilage is seen by comparing in order Figs. 1, 2, 3, 4, 5.

The life history of the loose cartilage, then, must comprise two injuries, one to depress it and one to free it. As a matter of fact this is often the case, though frequently the first injury is forgotten. By the first, a line of demarcation from the injured bone is made, and we must suppose that this demarcation is retained either by necrosis of the injured trabeculæ, or perhaps by a limited callous formation. Also after the osteo-cartilaginous chip has become free in the joint cavity, we must account for its continued growth. The fact that sections show that the cellular elements still stain in these bodies would at least indicate that they are alive, though not that they are capable of laying down new bone. Barth explains this growth by the very rational hypothesis that adhesions are formed with the capsule. As a matter of fact, this is often true. This condition was found in the fourth mouse in the patient before you.

Torn or displaced semilunars do not show in the x-ray. Such bodies as I have been referring to do, however, for they consist in part of bone. I will pass about a skiagraph taken before the operation of the left knee of the patient before you.

The practical surgical point to be learned from all this is, that in these operations the articular surface of the internal condyle should, if possible, be inspected. This patient would not have been permanently cured had I not done so.

EXPLANATION OF SKIAGRAPH 1.

Fig. 1. Osteo-cartilaginous chip removed from a knee joint of a cadaver by striking a blow with a mallet on the articular surface of the internal condyle, and prying out the depressed portion with a director. The cartilaginous portion does not show, but the bony trabeculæ which closely adhere to it give a characteristic appearance.

[1] Read at the Annual Meeting, Suffolk District Medical Society, April 25, 1903.

Figs. 2, 3, 4, 5 were removed from the patient shown at the meeting and are seen in the joint in Skiagraph 2. No. 2 was still attached like a trap-door. The base of its bed was of bare cancellated bone, and its own structure was apparently normal. It was the homologue of Fig. 1, which was removed experimentally. No. 3 was an exactly similar bit which was free in the joint, but filled its former bed. Its trabecular structure is somewhat less distinct than that of No. 2. Fig. 4 was too large for its bed, which had been partly healed in by cartilage. It was a typical joint mouse with one face of cartilage and the other of bone. The bony face had increased at the edges and had grown over on the cartilaginous face as if to bury it. This new growth is shown in Fig. 4 as an irregular concentric deposit about the original trabeculated bone.

Fig. 5. The fourth piece was found adherent to the capsule in the external cul de sac. By comparison with Fig. 4 the central trabeculated portion can be made out, but the structure has been much changed. The new concentric formation is denser than the original portion, and forms a dark ring about it.

Fig. 6 is a cross section of a bit similar to Fig. 1. The concave portion is cartilaginous and shows faintly.

Fig. 7. The x-ray of a median transverse section of a large specimen of a joint mouse from the Warren Museum. It had evidently been cracked in the middle, as had No. 4. On the under side the outline of the cartilaginous portion does not show, and on the edges one sees the bony portion tending to cover in the cartilage. Between, at the base of the cartilage, is a faint dotted line which probably represents the old trabeculæ originally torn off with the cartilage.

NOTE. — In addition to these specimens a number of others were shown, illustrating a series, from a chip in which the cartilaginous and bony faces were of equal size to one in which the bony portion had entirely infolded the cartilage. The latter had a clinical history of twenty-five years' duration.

EXPLANATION OF SKIAGRAPH 2.

A skiagraph of the knee from which the bodies shown in Figs. 2, 3, 4, 5 were taken. No. 2 is probably the one seen directly between the joint surfaces. No. 5 probably lay behind the bone and does not show at all in this plan. The portion of the joint where No. 2 lies is the exposed portion in flexion.

Clinical Department.

CLINICAL MEETING OF THE STAFF OF THE MASSACHUSETTS GENERAL HOSPITAL, APRIL 10, 1903.

The President, DR. J. COLLINS WARREN, in the chair.

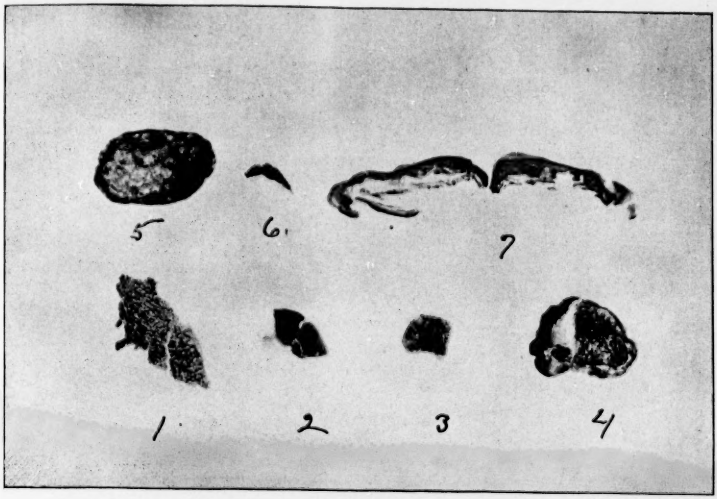
GANGRENE OF TESTICLE.

DR. ARTHUR TRACY CABOT reported and showed a specimen of a case of gangrene of the testicle due to torsion of the cord. Patient was a young man of thirty-six, who had never had any injury or difficulty of a genito-urinary nature. He was taken suddenly without apparent cause with pain in the center of the abdomen, just above the pubes. This occurred in the early forenoon, and was so severe as to oblige him to go to bed. Later in the day, however, the pain diminished, and he got up in the afternoon, and the following morning went down to business. He was soon forced to return home, at that time having very severe pain at the right inguinal ring and in the right testicle. A swelling began to appear in the right side of the scrotum, which simulated and was believed to be due to an epididymitis. After two days the inflammation in the skin covering that side of the scrotum and an indisinct sense of fluctuation led to the belief that there was fluid, probably purulent, there, and I saw the patient. The pain at that time was not very marked. Hot antiseptic fomentations were applied, and the following morning, the condition not being materially changed, operation was advised. On cutting into the scrotum the tissues outside the tunica were edematous and thickened. On opening the tunica a little bloody fluid escaped and the testicle was then seen to be black in color. This condition was found to be due to strangulation of the cord due to one complete rotation of the testicle, rotation being from within outward. The mesorchium was not long in this case, and there was no adhesion or holding the testicle in its twisted position. It was difficult, therefore, to see why the twist had occurred. The cord was tied off through the healthy part and the testicle removed.

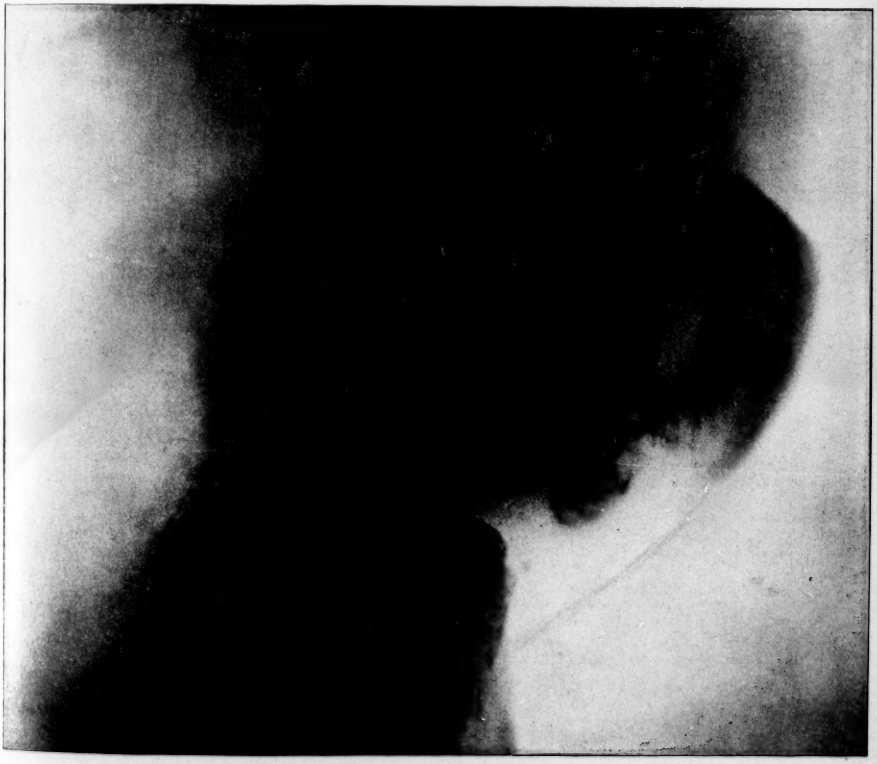
Dr. Cabot also reported a case of almost complete anuria which existed for three weeks, due to calculous pyelitis, and which was entirely relieved by operation. The case will be reported in full later.

DECORTICATION OF THE KIDNEY.

DR. E. G. CUTLER had shown a year ago, through the courtesy of Dr. Cabot and Dr. Elliot, three cases of decortication of the kidney. One that Dr. Cabot operated on was a woman of middle age, who looked as though she was fifty years old. She had all the symptoms of nephritis, and it was diagnosed, from examination of the urine, as glomerulo-nephritis. The operation was done by Dr. Cabot. She improved, and left the hospital July 12, tolerably well. She came back in October with the following history: The patient was somewhat pale. Examined hemoglobin, and it was found to be insufficient. She had been doing ordinary housework every day, and felt well, but about a month before she came to the hospital she had some swelling of the abdomen. We do not know whether this was due to fluid or gas. There was found to be $\frac{1}{8}\%$ of albumin in the urine. The urea does not



SKIAGRAPH No. 1.



SKIAGRAPH No. 2.

seem to have been estimated. There were a few waxy casts, many highly granular cells, with fat drops adherent, a few red blood corpuscles and compound granular cells. The woman said that she had been feeling perfectly well, as well as she had ever been in her life, but I doubt that. She had been an absolute invalid two years before the operation. She says that she did all her work up to the 1st of October, and since then she has been all right. When we last saw her she said she was better than she had been in a long time.

The next case of decortication which he spoke of was one which had improved until last June, operation by Dr. Elliott. Then the patient commenced to have the old symptoms, which gradually increased, and he died with the symptoms of a chronic nephritis. At the postmortem examination it was found that the capsule of the kidney had been entirely replaced. There was just as much of a capsule as there had been previous to the operation, and I understand that Dr. Wright said if the capsule had not been taken away at the operation he would say that he saw the original capsule of the kidney before him. The same condition of the kidney was seen at autopsy as was observed at the operation, so that the operation did not permanently help the patient. The disease went on, grew gradually worse and the patient died. It is obvious from this that if a patient does not continue to improve at the first operation of decortication, it is no more than fair to give him the benefit of a second operation.

The third case was that of a boy who had post-scarlatinal nephritis, of eight years' duration. Operation was done by Dr. Elliott. The boy improved, and the last time we saw him in the hospital was the 31st of October. At that time he is said to have had headache, and occasionally he had to rise three or four times in the night to make water. Examination of the urine showed a specific gravity of 10.30, with the slightest possible trace of albumin; 17.5 drachms of urea. The sediment showed one brown granular cast, a few red blood corpuscles, a few squamous cells and some leucocytes. The boy is here and seems to be perfectly well. When he first came he was thin, pale and bloated, but he does not look very ill now. Both kidneys were operated on in this case. He is going to night school and working around in the day time. We have given him instructions about diet.

CHRONIC GOUT.

DR. CUTLER then showed a case of chronic gout. He was a butcher or butcher's helper, and he had the characteristic symptoms of gout in the hands and feet, and had some in his knees. His fingers and feet were distorted. Ulcerations about the finger joints are spoken about in some of the English works, and he did have a number of such ulcerations, from which there came out urate of sodium crystals. Please note this finger, which is so distorted; some of the tophi on others are very well marked. He has a number of tophi in his ears. There are some x-ray pictures in the adjoining room which show the worm-eaten appearance of the bones. In the bones of the last phalanges you will see that same appearance. When he first came in there were a large number of these crystals which were coming out from the ulcerated places in all directions. He has improved very much since being here. We placed him on the proper regimen and the fingers have come out very nicely. I show him because it is the only case of the kind I have had since being in practice. I saw one case in England. All the books speak of it as if it were a not rare thing to see such fingers, but it is not so here. His feet show changes analogous to those in his hands, and show a deposit of sodium urate crystals in the cartilage and capsules of the joints, in the sheaths of the tendons, and in some of the tendons themselves. The patient's condition has continually improved since coming in here. He is under the ordinary treatment.

OBSTRUCTION OF INTESTINE.

The other case Dr. Cutler showed was the result of an operation for obstruction of the intestine. The history was as follows: Constipation, gradually increasing and finally attended by colicky pains. Then gaseous swelling of the abdomen, an enormous amount of peristalsis and finally vomiting. When he first came into the hospital it seemed obvious that he had chronic obstruction, and from indications present it seemed to be largely in the small intestine. Operation was deemed advisable. It was thought to be of sarcomatous nature. The operation was done by Dr. Elliott, and it was found that the tumor was low down in the small intestine. There was hypertrophy of the muscular tissue and infiltrated growth of the mucous membrane. Dr. Whitney found on examination that it was of a sarcomatous nature, and very kindly has given us a slide which shows the characteristic appearance. This tumor grew from the side of the intestine and looked very much like a stopper of a bottle, and it occluded almost entirely the gut.

DR. PORTER stated that the patient was doing very well now.

In answer to Dr. Cabot's question about the diet, Dr. Cutler said that the patient was given a liquid farinaceous diet.

DR. CUTLER. The man who writes the article on the kidneys in Allbutt's "System of Medicine," speaks of the great increase of urine which results from cutting out pieces of the kidney in animals, and after operations on the kidney in human adults. I do not see why it should not be a reasonable thing to do an operation such as decortication. Patients certainly seem better for a time, whether it be from the bleeding or ether or from other cause. I should think it might be a fairly good procedure to try when ordinary medical treatment does not seem to do any good. Surgical treatment does not do any harm. The patient will die anyway if left alone, and the surgical operation apparently

does no harm and sometimes does some good. I should think it might be useful in those cases which do not seem to improve under ordinary treatment after several months. It seems to me a reasonable thing to do.

DR. A. T. CABOT said that it was interesting to notice that the case just alluded to by Dr. Cutler had the clinical appearance of parenchymatous nephritis rather than of an interstitial nephritis. It was, therefore, not one of the cases in which it was claimed decapsulation was likely to be of service, and yet it had derived very evident benefit from the operation. Dr. Cabot said that since he last reported on this subject he had had one other case, also one of parenchymatous nephritis, in which the operation was done rather at the urgency of the family than because the case seemed proper for surgical interference. It was carefully explained to the people that the condition was not one in which improvement from the operation was to be expected as far as could be judged from clinical symptoms. They, however, wished to have the attempt made, hoping that the unexpected might be fortunately accomplished. In this case, there was no apparent result from the operation; patient bore it well; suffered no detriment from it, but afterwards went on slowly failing, and died some months later.

DR. C. A. PORTER showed the following cases:

PANCREATITIS. OPERATION. RECOVERY: 1. ACUTE PANCREATITIS.

Simon Pinaski, aged thirty-six, Russian, entered the hospital on October 30, 1902, in Dr. Warren's service, complaining of dull pain in the right hypochondrium for the past seven years, with chronic constipation. One week before entrance he was seized with a very sharp pain in the epigastrium, later localizing itself in the right iliac region. Pain was very severe. No vomiting, no jaundice, no chills. Bowels moved the last two days. Examination of the abdomen: quite tender in epigastrium and especially in region of gall bladder, where the resistance is marked. No tenderness in iliac fossa. Under rest in bed and poultices the symptoms abated, and he was seen by Dr. Shattuck on Nov. 5, who found nothing pathological. Between that time and Feb. 17, when he entered the accident room again, he had had five attacks of agonizing pain in the epigastrium. He has been seen by Dr. Pfaff when he was slightly jaundiced, who believed that he had gallstones. He was also seen by Dr. Vickery and Dr. Gannett once or twice, without a definite diagnosis being made.

On Feb. 17 he was brought into the accident room, having been seized two and a half days before with a particularly severe and sudden pain in the epigastrium, which required a larger amount of morphia to give relief. The pain radiated to the right into the hypochondrium, and to the iliac fossa. On the night before entrance the patient began to vomit, and the vomiting has been persistent. The bowels moved on the morning of this last attack. He had no chill. Examination showed a rather poorly nourished man, temperature 100, pulse, 80, poor quality. Slight cyanosis. Heart and lungs negative. Abdomen much distended, with a large amount of free fluid, which moved on shifting position. Tenderness was most marked in the right iliac fossa, but was also present in the epigastrium, with some rigidity. Patient vomiting continuously. In view of the previous attacks, the free fluid, distention, vomiting and most marked tenderness in the right iliac fossa, with normal temperature, a diagnosis of probable intestinal obstruction from a band was made, and an immediate operation done.

A long incision was made through the right rectus muscle, showing the intestines moderately distended, and everywhere injected. A large amount of blood-stained fluid escaped from the abdomen and pelvis. No collapsed intestine could be found, no band or adhesion. Scattered everywhere through the abdomen, especially marked in the omentum, were areas of fat necrosis, varying in size from a pinhead to a large pea. The mesentery of the appendix was especially involved, the appendix was large, injected, and was therefore removed. On examining the gall bladder it seemed to be somewhat distended, and possibly to contain a small stone. Examining further, it was found that the pancreas was very large, remarkably tense, standing up from the spinal column like a plaster of Paris cast. The vessels in the small intestine were tremendously engorged, and the intestines somewhat cyanotic, as if there might be pressure on the mesenteric veins from the swollen pancreas. After thorough irrigation with salt solution, the opening was closed and another incision made along the left costal margin. The intestines were packed inward and upward with large gauze sponges, and the pancreas could then be clearly seen, of a deep purplish color, appearing through the peritoneum. About it the areas of fat necrosis were especially well marked. In order to relieve tension a longitudinal incision was made from the median line, avoiding the mesenteric vein, out to the tail of the pancreas. This incision was about four inches long and about three-quarters of an inch deep. No pus was discovered, but the peri-pancreatic tissue was infiltrated with blood, with here and there large areas of fat necrosis. The wound was packed with gauze strips, in order to wall off the pancreas from the rest of the abdominal cavity. A rubber drainage tube was placed in the center of the gauze.

Convalescence has been uninterrupted since then, except for occasional vomiting for a few days. On the 26th, nine days after the operation, a dressing was done under ether, and all of the gauze removed. The pancreas was plainly seen to have diminished about one-third in size. One or two areas of fat necrosis were still visible. Repacked with smaller wicks.

On March 12, twenty-three days after operation, on doing the dressing, two portions of necrotic tissue were removed, one about three

inches long by one-half inch in width. Examination showed nothing but necrotic fat. Since then the wound has been granulating well, and now is marked by a small sinus.

During convalescence the interesting features have been an entire absence of fever, a white count which has never been over 12,000 and has averaged about 8,000; the hemoglobin six days after operation was 80%; blood coagulation, time, six seconds. Examination of the urine, which has been followed closely, showed at first numerous hyaline and fine granular casts, with a slight amount of albumen. On the 23d a large amount of indoxyl, 1½% of sugar. This was the only time in which sugar was found in the urine. On the 26, 27th, and 28th small amounts of albumose were present. Skatol and kreatinin increased. At no time have the stools been clay colored, nor have they shown any signs of abnormal intestinal digestion.

The case is reported not simply because the man has recovered, but because the diagnosis of the cause of the pancreatitis is still unmade. The pancreas at present is slightly enlarged, at times somewhat tender. Nothing was removed at the operation, and yet the man has been much better since it than before. The question arises as to whether he had swelling of the duct from infection, or whether a stone were impacted in the ampulla of Vater. This case will be later reported in greater detail.

(To be continued.)

Medical Progress.

REPORT ON PROGRESS OF SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D., BOSTON.

ATTEMPTS AT LEUCO-THERAPY.

Labbé [1] reviews the various experimental work that has been done in the line of inducing hyperleucocytosis in animals as a protection against infection. He shows that the induced hyperleucocytosis, while theoretically a powerful means of aiding the natural defenses, is in practice able to confer a preventive protection only and seems to be powerless against already established infection. At the same time, he adds, the hyperleucocytosis induced by nuclein — which is the substance that has been most generally employed — is possibly not intense enough for the desired purpose. It is not to be compared with the hyperleucocytosis induced by disease germs. When we have learned some more efficient means of inducing hyperleucocytosis in animals, it is possible that the results of this leuco-therapy may be applied to man with success.

IGNITION OF ETHER VAPOR BY AN ELECTRIC LIGHT.

Every surgeon thoroughly appreciates the danger of an open lamp anywhere near ether vapor, but it is generally supposed that an electric incandescent light is perfectly harmless. To be sure, accidents from this cause are extremely rare, but D. H. Murray [2] reports an instance in which the ether vapor about a cone, by which a patient was being anesthetized, was ignited when an electric light was turned on near by. The patient's hair was badly singed, but no serious injury resulted. As there was no exposed fire or blaze in the operating room at the time, it was concluded that the ignition resulted from the spark in the electric light, made when the contact took place in turning on the light. It is a possible danger worth remembering.

ON THE FATAL EFFECTS OF CHLOROFORM ON CHILDREN SUFFERING FROM A PECULIAR CONDITION OF FATTY LIVER.

Leonard G. Guthrie [3] gives a résumé of a paper written some years ago entitled "On Some Fatal After-effects of Chloroform on Children," as an introduction to the present article. In the ten cases reported in the previous article it was not proven that death was not due to carbolic acid poisoning. In this article four cases are added which he thinks throw light on the original ten recorded in the earlier paper. He says the additional cases seem to prove the following: (1) That neither carbolic acid poisoning nor fat embolism will account for these mysterious fatalities. (2) That the severity of the operations has little if anything to do with the cause of death. (3) That the only pathological condition commonly found after death is a peculiarly intense fatty degeneration or fatty infiltration of the liver. This condition was found in five of the first series and in three of the second series of cases. It was not noted in three of the first series, and in three of the second series of cases. It was not noted in three of the first series, but in these a microscopical examination was not made. Of the remaining three one recovered and in two permission for a post-mortem examination was refused. (4) The only other circumstance common to all the cases was that chloroform had been administered some hours or days before death. We are therefore driven to seek an explanation in the morbid state of the liver, which was demonstrated in 8 out of 14 cases, and can therefore not be regarded as a pure coincidence, and also to inquire again what part (if any) was taken by chloroform in producing it.

RESEARCH WITH RADIUM RAYS.

London [4] used for all his tests 30 mg. of radium bromid in a rubber and metal box with a mica cover. He found that radium rays are able to kill mice without direct contact. Twenty-one grown mice and six controls were placed in glass vessels, three or four in each, and the box of radium was laid on the cover of the vessels for one to three days. The controls were lively at the end of the fifth day, but the other animals were all dead by this time. The symptoms noticeable

[1] Presse Med., Paris. Journ. Amer. Med. Ass., Sept. 12, 1903.

[2] N. Y. Med. Journ., June 27, 1903. Med. News, July 25, 1903.

[3] Lancet, July 4, 1903.

[4] Berl. klin. Wchnschr. last indexed xl, p. 1791. Journ. Amer. Med. Ass., Aug. 8, 1903.

about the third day indicated depression of the cerebral nervous system at first, followed by arrest of the functions of the cerebro-spinal system in four to nine hours. The most profound anatomic alterations were in the skin and cerebral cortex. He further refers to the fact that if a stick of sealing wax is rubbed with flannel, scraps of tissue paper will cling to it, but he found that if the wax were passed over the radium box after being rubbed the tissue paper was not attracted to it. On the human skin the rays induced a so-called "cold gangrene" in tests on himself and his assistant. The lesions were so peculiar and characteristic that they must be designated as dermatitis radiogenes. He also states that arterial blood became dark-colored under the influence of the rays. In his tests on blind subjects he found that they perceived a visual sensation when the radium was applied to their eyes, but this occurred only in those subjects who still retained a certain perception of light. The blind who had never experienced the sensation of light afforded negative or contradictory results. Blind subjects still able to distinguish between light and darkness were able to see in outline dark objects held against the fluorescent screen lighted by the radium rays. Two lads, blind from atrophy of the optic nerve, were thus able to learn by the silhouettes all the letters of the Russian alphabet and make out entire words. He also states that he found certain persons who were able to tell — by the visual sensation experience — when the radium was brought close to the back of their heads, but only when approached to a certain point. He suggests that this may possibly be the result of excitation of the visual center at this point by the rays. The visual impression is perceived from the radium rays even when the eyes are closed, bandaged and covered with three or four superposed hands. His concluding statement is to the effect that it is possible to examine articles through the microscope in a dark room with merely the light from a good screen under the influence of the radium rays. His research was conducted at the Institute for Experimental Medicine at Berlin.

SUTURE OF HEART.

Wolff [5] states that 39 cases have now been recorded of suture of the heart, and the results indicate that suspicion of a stab wound of the organ imposes operative intervention, even in the absence of vital indications, as a prophylactic measure. On the other hand, wounds from firearms may be treated expectantly. In the former cases the pleura has almost invariably been opened and, therefore, it is not necessary to operate extrapleurally. The pericardium should be sutured, the tampon used only when the wound is infected. The button suture has proved most effective; the threads tied during the diastole. The left ventricle is most favorable for an operation of this kind, as the patients are not so liable to bleed to death on the spot. The case reported by Pagenstecher confirms Bode's experimental research, demonstrating that the nourishment of the heart does not suffer materially after ligature of a coronary artery. Wolff reports three cases of suture of the heart with two recoveries, and states that this brings the total on record to 42, with 17, that is 40.4%, recoveries. Only one was a firearm wound. Fischer's statistics showed that only 10% recovered in the unoperated cases. Wolff adds that intervention may be necessary and successful even in the absence of an external wound, as witness a case described in the *Lancet* in 1897. A young man was kicked in the breast at football. Unconsciousness persisted and the heart dullness kept on increasing. The pericardium was incised and found filled with blood, but bleeding from the heart had ceased. After the blood had been drained away the young man was fully restored and was able to join in the game again.

STATISTICS OF OPERATIVE-TREATED ANEURISMS.

This communication of Jakobsthal [6] issues from Braun's clinic at Göttingen. In the first part the history of operative treatment of idiopathic aneurism of the subclavian is reviewed, with a bibliography of 94 references and 21 new cases collected since Souchon's statistics of 81 in 1890. In the 21 new cases there were 17 men and 1 woman; the right subclavian was affected in 12 and the left in 5. In 19 cases followed for sufficient length of time 13 were permanently improved and 3 definitely cured. Treatment by distal ligature has 3 improvements out of 5 to its credit; proximal ligature, 5 out of 7; both distal and proximal, 1 out of 2 and extirpation, 3 cures out of 4 cases. The general conclusions of the work are that extirpation is the ideal method of treatment. It not only guarantees a radical cure, but also prevents the pains liable to occur after the aneurism has been obliterated by thrombi. Extirpation is not practicable if the walls are thin and pulsating unless the aneurism is very small and free from adhesions, or if large, is partially obliterated with thrombi. In case the aneurism is adherent to the clavicle and subclavian vein, the parts involved must be resected too. When extirpation is impossible, proximal ligature is next advisable. If the contents of the sac do not become solid after central ligature, a distal one should be applied. The latter alone offers little prospect of a cure. In case operative treatment is impossible, Macewen's method of introducing needles and scratching the walls certainly deserves attention, as it proved successful in one case in his experience. As a last resort, electrolysis and "filipuncture" might be tried. Each has one case of improvement to its credit. Judgment is still in suspense in regard to the efficacy of gelatin injections.

The second part of the work is devoted to aneurism of the aorta, reviewing 13 new cases in addition to the 34 previous statistics. In 10 the thoracic aorta was involved and in 3 the abdomi-

[5] Deutsche Ztschr. f. Chir., Berlin. Journ. Amer. Med. Ass,. Sept. 19, 1903.

[6] Deutsche Ztschr. f. Chir., Berlin. Journ. Amer. Med Ass., July 25, 1903.

nal. The results of operative treatment demonstrate that simultaneous ligature of the right carotid and subclavian in case of aneurism of the ascending aorta cannot be considered a particularly dangerous operation. In a number of cases it was followed by improvement in both the subjective and objective symptoms. The same remarks apply also to ligature of the left carotid or simultaneous ligation of the left and subclavian in case of aneurism of the arch. Reports of the ultimate outcome of the cases on record are needed before final judgment can be passed on this operative treatment.

ENTEROSTOMY FOR DRAINAGE AND NOURISHMENT.

An interesting paper on this subject, by Finney and Pancoast, appeared in *American Medicine*, Philadelphia, Aug. 22, 1903.[7] After the loop of bowel is brought out and opened, a rectal tube is inserted first in one direction and then in the other, for several feet each way. This allows escape of gas and feces with less risk of soiling the peritoneum than by other methods. The special indications for enterostomy considered in the article are as follows: (1) Temporary drainage of a distended intestine, allowing it to regain its normal tone in cases of functional paralysis of the bowel of septic or other origin, especially in those cases following appendicitis with peritonitis. (2) To enable one to nourish a patient whose stomach and rectum are for any reason irritable and unable to retain or absorb a sufficient amount of nourishment. The operation of enterostomy, when quickly done under local anesthesia, is a comparatively slight one, and causes little disturbance to the patient. The relief afforded thereby often enables him to withstand, later, more radical measures. The amount of fluid that can be given in twenty-four hours by this means and retained is surprisingly large. Finney calls attention not only to the advantages of relieving the distended intestine, but insists that the intestinal fistula once established should be looked on more as a mouth than as an anus. It should be used for irrigation of the intestinal canal, for the nourishment of the patient and for the introduction of cathartics. He has often noticed that food introduced into the intestinal canal through the fistula had of itself a stimulating effect on peristalsis. He reports seven casess in detail, some followed by postmortem examination, as the enterostomy was undertaken as a last resort. It always caused great relief and postponed the inevitable fatal termination, and saved several otherwise doomed patients. The fistula usually closes spontaneously.

(*To be continued.*)

THE VALUE OF THE FINGER-JOINT. — Five hundred dollars is the value placed on a man's finger-joint by a jury at Newark, N. J. Henry Klein, a hatter, in Newark, was the plaintiff. While at work on Sept. 21, 1902, Klein's left hand was caught in a forming machine, and one finger was so badly crushed that it was necessary to amputate it at the first joint.

[7] Journ. Amer. Med. Ass., Sept. 5, 1903.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

PROCEEDINGS OF THE TWENTY-EIGHTH ANNUAL MEETING, HELD IN WASHINGTON, D. C., MAY 12, 13 AND 14, 1903.

(Concluded from No. 15, page 409.)

PRESIDENT'S ADDRESS.

This was delivered by the President, DR. JOSEPH E. JANVRIN of New York City.

After paying fitting tributes to Dr. John Byrne, Dr. T. Gaillard Thomas and Dr. Edward W. Jenks, he discussed the subject-proper of his address, namely,

SURGICAL TREATMENT OF EARLY DIAGNOSED CANCER OF THE UTERUS, MORE ESPECIALLY BY HYSTERECTOMY.

He pointed out the conditions in which vaginal and abdominal hysterectomy held out good hopes for a radical cure; also the conditions in which the operation held out some prospects of a radical cure, and certainly a prolongation of life with a more comfortable existence than could possibly be hoped for if hysterectomy was not resorted to.

He took up the development of cancer in and from the cervix. His own observations as to the extension of epithelioma beginning in the cervix are as follows: (1) Up and into the cervical canal; (2) up and into the uterine body; (3) to the tissues surrounding the cervix, the parametrium especially; (4) downward upon the vaginal mucosa, and after a certain time through the mucosa into the wall itself.

The author, after quoting freely the statistics of other writers, both European and American, regarding cancer of the uterus, stated that his own statistics up to Jan. 1, 1899, were as follows: Abdominal and vagino-abdominal hysterectomy: 12 cases, 2 cured, more than eight years having elapsed since operation; 6 recurrences; 4 deaths from operation, 2 from shock, one from septicemia, and 1 from uremia; percentage of cures, 16.6. Vaginal hysterectomies: 38 cases, 10 permanently cured; 15 recurrences; 4 deaths from operation; 10 lost sight of after a few months; percentage of cures, 26.3. Total number of cases, 50; 12 cured; general percentage of cures, 24.

He believes that vaginal hysterectomy, with removal of as much parametrium as is possible by this method, and also the removal of the upper half inch or more of the vagina, will accomplish just as much as any other method, and at the same time carries with it the least danger as an operation *per se*, for it is extremely rare that a patient succumbs to this operation. It was by following out this rule that the statistics of his own cases up to January, 1899, have been so favorable. During the past four years he has extended the field of operation for the purpose of removing a highly offensive local condition, and in that way making a longer lease of life

more comfortable to the patient and less offensive to herself and to her friends.

DR. THADDEUS A. REAMY of Cincinnati, Ohio, read a paper on

CARCINOMA OF THE CERVIX UTERI.

Among other things, he stated that spontaneous recovery from carcinoma does not occur. Unequivocal recovery lasting from ten to twenty-five years of two cases following removal of the diseased and adjacent tissues proves the curability of carcinoma of the cervix and also its local origin. The author reports six cases of carcinoma of the cervix uteri. No. 1 was operated upon eighteen years ago, and is in good health to-day; No. 2 has gone nine years without recurrence of the disease, and No. 3, fifteen years without recurrence; twelve years have elapsed without recurrence in Case No. 4; in No. 5 eighteen years have elapsed since removal without recurrence; and No. 6 has gone twelve years without recurrence.

DR. REUBEN PETERSON of Ann Arbor, Mich., followed with a paper on

PRIMARY CARCINOMA OF THE VULVA.

He reported four cases of primary carcinoma of the vulva. He presented a résumé of the literature of the subject, and the conclusions drawn therefrom. The cases were narrated in detail. He spoke of the frequency as compared with other carcinomatous conditions of the genital tract, and discussed at length the diagnosis and symptomatology. In considering the operative treatment, he spoke of the advisability of removing the inguinal glands. If carcinoma of the vulva is seen and treated early enough, good results can be obtained. Veit quoted Schwartz as having ten permanent recoveries out of twenty-three cases. While this may be overstating the fact, it is unquestionably true that there is much more hope of cure in cases of carcinoma of the vulva after the radical operation than after the most radical operations for carcinoma of the uterus.

DR. GEORGE M. EDEBOHLS of New York City read a paper on

RENAL DECAPSULATION FOR PUERPERAL ECLAMPSIA.

This operation for puerperal eclampsia of renal origin is the logical outcome of the encouraging results following the author's operation in cases of chronic Bright's disease. The author said he has successfully performed bilateral renal decapsulation for puerperal eclampsia upon a primipara two days after a forced delivery. The convulsions began before labor, and continued until the time of operation, the patient having a convulsion while under chloroform on the operating table. This operation, performed on Feb. 17, 1903, is believed to represent the first instance of renal decapsulation, or, for that matter, of any operation upon the kidney or kidneys ever undertaken for the cure of puerperal convulsions. The favorable results, both immediate and remote, in this case, full details of which are given in the paper, at once assign a place to renal decapsulation as one of the resources at the command of the profession in the treatment of puerperal eclampsia. He said a woman who is suffering from uremic convulsions is entitled to the positive benefits of decapsulation whether pregnant, in labor or in puerperium.

The following topic was discussed in a series of papers:

SHOULD THE UTERUS BE REMOVED WHEN THE OVARIES AND TUBES ARE REMOVED IN CASES OF DOUBLE PYOSALPINX, WHEN OPERATING EITHER THROUGH THE ABDOMEN OR THE VAGINA?

DR. ANDREW F. CURRIER of New York City, in his paper, stated that if this is proposed as a matter of routine, he would reply emphatically, no. If it is proposed as an expedient, when the uterus itself is diseased extensively, he would say Yes. It may also be removed if it has been greatly injured in the extrication of the appendages, or if it should seem to be required as a means of controlling troublesome hemorrhage. To remove the uterus in a young woman may possibly produce an unfavorable mental effect as a consequence, near or remote. To remove the uterus of a woman near, at or past the menopause, might add an element of risk to the operation. To remove the uterus might weaken the pelvic floor and introduce an element of danger from enterocele. To remove the organ unnecessarily is bad morally, for it tends to establish the impression of the unimportance of the organ, and that it may be unhesitatingly extirpated by any one who has the requisite skill. To remove the uterus on the ground that it may possibly be the seat of malignant disease in the future is assuming more than the clinical history teaches in the great majority of cases, and is, moreover, a reproach to surgery, making it destructive instead of conservative.

DR. PHILANDER A. HARRIS of Paterson, N. J., stated that when suppuration has become well established in both tubes their exsection is the only operation which can be relied on to effect a cure. By exsection is meant the removal of the lumen of the tube to the uterine mucosa. Less radical operations, as hemisection and disinfection of the ampulla and larger portions of the tube, probing and washing of the tube and amputation of distal portions of pus tubes, are incomplete operations, and are proportionately unsuccessful in that they leave behind a diseased sinus, which not only continues to exist, but is productive of discomfort and other ill consequences to a greater or less extent. In bilateral exsection of double pyosalpinx, sufficient ovarian stroma may be left to influence and continue menstruation in at least 95% of any large class of cases operated upon. The ovaries frequently participate in suppuration, which they derive from pus tubes. But in them suppuration is more easily terminated,

and exsection is not advised excepting for extensive abscess of the ovary at the time the tubes are exsected, or a belief or knowledge that the suppuration in the ovary is tubercular in character. Simple excision of double pyosalpinx affords the maximum degree of relief, with a minimum of mutilation and interference with the functions of the pelvic organs. The complaints arising from the existence of endometritis often cease after simple exsection of double pyosalpinx. If the symptoms of endometritis continue and greatly harass the patient, the uterus may be removed by vaginal section. The price of removal of the uterus in every case of double pyosalpinx may be partly estimated by the following results: (1) Loss of menstruation in every instance. (2) Partial or complete extinction of the sexual quality in a large proportion of the cases, together with incomplete physical capacity for sexual participation. (3) Injury to the nervous system of the patient, arising from her knowledge and appreciation that she has been prematurely and possibly unnecessarily deprived of these and other qualities which render her physically and, to a certain extent, morally inferior to other women.

Dr. I. S. Stone of Washington, D. C., stated that no organ should be removed unless it is absolutely necessary. In a large majority of cases the pus found in diseased adnexa is sterile. It follows that the chief element of danger from sepsis is eliminated, and the uterus is not the seat of dangerous microbic infection. The exception to the above rule may be found in puerperal infections. When purulent adnexa are removed, the uterine cornua should be excised, and the uterus permanently sealed, and thus made a barrier against further infection and also to permit effective treatment addressed to the uterine cavity, if necessary. Hysterectomy requires additional time, causes further traumatism and necessitates changes in the anatomical relations of the vagina, bladder, etc. If necessary to drain the pelvis by way of the vagina, the usual route through the cul de sac posterior to the uterus answered every purpose; finally a number of women object to pan-hysterectomy, and besides the question of its effect upon the mental status of the patient is *sub judice*.

Dr. Matthew D. Mann of Buffalo, N. Y., said that the almost sole cause of pus tubes is gonorrhea, though there may be a mixed infection. The uterus is usually infected and may make trouble afterwards and be the cause of spreading the infection. The uterus is no longer of any use. Menstruation does not always stop after the removal of the tubes and ovaries, and if it remains, it might become excessive and cause trouble. The uterus might become the seat of cancerous disease. In acute infection the removal of the uterus affords the best means of securing drainage. The results by the vaginal route, where the uterus is always removed, warrant its removal by the abdominal route. The woman's sexual life is unaffected by the removal of the uterus. The additional time taken for its removal is more than counterbalanced by the securing of good drainage.

Dr. Charles P. Noble of Philadelphia, Pa., said that of hysterectomy for circumscribed pus limited to the uterine appendages, that is, pyosalpinx or abscess of the ovary, he has had fifty-eight cases, one death, a mortality of 1.7%. Of hysterectomy for intraperitoneal abscess, in addition to pus in the uterine appendages, he has had six cases, four deaths, a mortality of 66⅔%. Of appendages removed for circumscribed pus contained in the tube or ovary, that is, pyosalpinx or abscess of the ovary, seventy-six cases, seven deaths, a mortality of 9.2%. Of appendages removed for circumscribed pus contained in a tube or ovary since Jan. 1, 1895, thirty-six cases, two deaths, a mortality of 5.5%. Of appendages removed for intraperitoneal abscess in addition to pus in ovary and tube, twenty-two cases, five deaths, a mortality of 22.7%. Incision and drainage for pelvic suppuration, fifty-eight cases, one death, a mortality of 1.7%.

Dr. J. Wesley Bovee of Washington, D. C., read a paper on

URETERO-CYSTOTOMY.

He narrated the history of this operation, pointed out the indications, discussed the diagnosis, routes and methods of operation, complications, technique, after-treatment, detailed histories of cases and gave the results.

Dr. Walter P. Manton of Detroit read a paper on

OCCURRENCE OF GALLSTONES IN INSANE WOMEN.

He stated that cholelithiasis is of frequent occurrence among the insane women, but that symptoms are usually wanting, so that statistics must be obtained solely from autopsy findings. From his experience at the Eastern Michigan Asylum he finds that gallstones are present in rather more than 26% of the patients dying at that institution, in whom the abdominal contents was examined. The paper was intended only as a small contribution to the knowledge of the subject, and as preliminary to more extensive study of gallstones in insane women at some future time.

EXCISION OF THE PROXIMAL ENDS OF THE FALLOPIAN TUBES AT THEIR ORIGIN IN THE UTERUS THE OPERATION OF CHOICE FOR THE EXTREMELY RARE CASES WHEREIN STERILITY IS DESIRABLE.

Dr. Philander A. Harris of Paterson, N. J., read a paper with this title. The object of this operation is to take the place of the Porro operation, the bilateral removal of the ovaries, or to take the place of bilateral excision of healthy tubes. Menstruation would not be sacrificed. Every advantage arising from retention of the ovaries would be preserved to the individual, excepting the single item of impregnation. Tubes thus disconnected from the uterus would probably remain immune from future gonorrheal infection of the endo-

metrium. A patient thus sterilized can doubtless be cured of her sterility by implantation of the tubes through the uterine cornua to the uterine cavity. While there are doubtless cases which are characterized by certain conditions of the body, mind or nervous system, calling for the voluntary production of sterility, there must necessarily be a very limited field for the employment of this operation. If a case is to be surgically sterilized, it should be effected in such manner that the patient and her friends may feel that she can be restored to fertility, should the pathological factors of her case so abate or disappear as to render impregnation and pregnancy permissible. No attempt was made by the author to present the indications for an operation which would produce sterility for temporary purposes, although such instances are believed to be within the range of possibility, and if so, emphasized the advantage of doing the primary operation in the manner proposed.

PERSONAL EXPERIENCE IN OPERATIONS UPON DIABETIC PATIENTS.

In a paper on this subject, DR. CHARLES P. NOBLE of Philadelphia stated that of the seven patients operated upon by him six made good recoveries and one died of diabetic coma. In the six remaining cases the healing of the wounds and the general progress of the patients toward recovery were not different from that in patients not the subject of glycosuria.

In looking up the literature of the subject, he has been able to add to his own list sixty-two cases of operations upon diabetics, upon those organs of the body which are the special field of the gynecologist and abdominal surgeon, making a total of sixty-nine cases.

The contraindication to operation was strongest in those patients suffering markedly from the constitutional symptoms of diabetes — poor nutrition, wasting, intense thirst and morbid appetite.

OFFICERS FOR THE ENSUING YEAR.

The following officers were elected: President, DR. EDWARD REYNOLDS of Boston, Mass.; First Vice-President, DR. J. WHITRIDGE WILLIAMS of Baltimore, Md.; Second Vice-President, DR. EDWARD P. DAVIS of Philadelphia, Pa.; Secretary, DR. J. RIDDLE GOFFE of New York City, re-elected; Treasurer, DR. J. MONTGOMERY BALDY of Philadelphia, Pa., re-elected. Place of meeting, Boston, Mass., fourth Tuesday in May, 1904.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

SEVENTEENTH ANNUAL MEETING, HELD MAY 12, 1903, WASHINGTON, D. C.,

PAUL THORNDIKE, M. D., of Boston in the chair.

THE PERMEABILITY OF THE URETHRA FOR CERTAIN SILVER SALTS.

DR. EDWIN C. BURNETT of Boston read this paper. He said that during the past four months he had undertaken a series of experiments to determine, if possible, the permeability of the urethral mucous membrane for certain silver salts, and although he had not concluded them, the results thus far had been so uniformly alike that he felt justified in presenting them to the society as a preliminary report. Argyrol was the salt he had experimented with. As this salt was very soluble and readily washed from animal tissues, it was necessary to find some means of precipitating it in an insoluble form in the tissues and, at the same time, to have the precipitate distinguished from tissue elements by its color; a solution of hydrogen sulphide slightly acidulated with hydrochloric acid was found well adapted for this purpose. This produced an insoluble black stain of dead tissues that had first been immersed in solutions of argyrol. In the first series of these experiments the urethræ of dogs were injected with solutions of the salt, the strength of which varied from 1% to 5%. This was repeated for six days, and on the last day, after washing the urethræ thoroughly from the argyrol so that no postmortem staining could take place, the urethræ were removed. The tissues were then immersed in a solution of hydrogen sulphide to fix the silver taken up by the cell, and was then prepared for the microscope. In the next series of cases silver nitrate was used. In the third series rabbits were used instead of dogs. In all the experiments the results were the same. It was found that the silver solutions did not penetrate, only the upper surface of the top layer of cells showing a trace of silver in the form of a thin black line of silver sulphide, the result of the reduction of the residue of the two silver salts by the hydrogen sulphide left after washing.

INFECTION OF THE PROSTATE.

DR. JOHN VAN DER POEL of New York said that the element of infection of the prostate should be more often considered because, in a large number of cases, the posterior urethra becomes infected and more quickly than is generally supposed. The statistics regarding this varied from 10 to 90%. Frank of Berlin gave 33%. In 190 cases which Dr. Van der Poel reported a year ago last June, he reported evidences of posterior urethritis in 39%. This condition should not be lightly overlooked and, although in all cases symptoms were not given, such a condition might exist and then extend to the prostate. Cloudy second urine and frequent micturition came on, however, in a large number of cases at the end of the first week, but he thought it a mistake to always trust to this test, as it sometimes may not be present. The prostate itself, he said, became infected in those instances when the posterior urethra was infected in almost 100%. This could not be always proven by the

obtaining of the gonococci from the prostate itself, although it could be in many instances. He said the method of simply irrigating the anterior and posterior urethra before massage and then obtaining the prostatic fluid from the meatus for examination for gonococci was open to question. The more correct way would be to obtain the fluid direct from the prostatic duct through the endoscope after thorough irrigation, though this was impracticable for obvious reasons in many cases. When once the gonococci reach the prostatic gland he said it was almost impossible to say how soon we were going to get rid of them. Massage would accomplish a great deal, but we were unable to get at the entire gland in this way, although we could empty the lateral lobes to a greater or less extent in those cases where the prostatitis was simply catarrhal or follicular in form. He believed we should differentiate between the different forms of prostatitis. That the gonococci might enter the parenchyma of the gland in a short time had been proven by many observers, and after having once obtained a foothold it was a very difficult question to say how soon we were going to get rid of them. If they were confined to the ducts of the gland (a simple catarrhal prostatitis) or to the follicles, we might be able to get rid of them by massage. He said, therefore, that we should not forget that in about one-third of the cases there will be shown a posterior involvement, and that it might be taken for granted that the gonococci would extend directly into the prostate in many cases; that, when once in the prostate, they often get into the parenchyma of the organ, and this fact explained why a great many cases did not permanently respond to any of the silver salts, and why reinfection, or more properly auto-infection, of the urethra was so frequent.

A CASE OF STRANGULATION OF THE TESTIS DUE TO TORSION OF THE CORD.

Dr. Arthur Tracy Cabot of Boston read this paper. He said that such cases were extremely rare, Dr. Scudder being able to find only thirty-two cases in literature. The patient was twenty-six years old. One morning, without previous injury or disturbing case, he was suddenly seized with a severe paroxysmal pain in the center of the lower abdomen, close above the pubes. He was pallid, nauseated and covered with sweat. In the afternoon he was so much better that he got up from bed. For two days following, the pain was more or less severe and there was an increase in the size of the testicle. Antiseptic fomentations not giving relief, operation was decided upon. The tissues were thick and edematous. A little blood-stained fluid escaped from the tunica vaginalis when opened. The testicle was black, mottled with plum color. The cord was slightly twisted, the rotation being from within outwards. One complete twist of the cord untwisted it. The mesorchium was not long, and the cord was tightly wrapped about it. The testicle was in a gangrenous condition, and had to be removed. Convalescence was uninterrupted.

Dr. Ramon Guiteras of New York reported an interesting experience he had while operating upon a case of varicocele; he found a complete twist of the cord and yet the patient had never felt any pain.

Dr. Van der Poel of New York said that he thought there were a great many instances in which the cord might become untwisted or be untwisted by the patients themselves, without their being aware of it. In the *New York Medical Record*, June 15, 1895, he reported a case occurring in a medical student who had had an undescended testicle at birth, though at two years it came down to the upper part of the scrotum. Suddenly, when he was twenty-one years old, he experienced a sharp pain along the cord, with more or less abdominal tenderness, which ran down into the testicle. He did not know the nature of his trouble, and continued to work until obliged by the pain to remain quiet. After some manipulation of the parts for two or three hours the pain was relieved. He had similar attacks at intervals of from once in six months to twice in twenty-four hours, which seemed to come on without any known reason both during the day and night, but they were more frequent when he was up and about. Soon the true nature of the attack became evident. He found that he had a true twist or torsion of the cord, and that he could untwist it himself. When he now has these attacks he simply untwisted the testicle from within outwards, and so is relieved. The torsion was upon the right side. Upon examination he found the testicle hugging the upper part of the scrotum, and that it was not well developed, and that it could be twisted about one and a half complete turns without pain, and that when turned for another quarter it would remain in that condition, then become painful, and swelling of the cord at once began.

(*To be continued.*)

Recent Literature.

The Prevention of Disease. Translated from the German with Introduction by H. Timbrell Bulstrode, M.A., M.D., D.P.H., Med. Dept., H. M. Local Government Board. 2 v. New York: Funk & Wagnalls Co. 1903.

Vol. I has thirteen chapters, to which nine German writers contribute. Vol. II has eight chapters, to which nine writers contribute. The first chapter is devoted to a history of the prevention of disease. Then follow articles on general prophylaxis, and prophylaxis as applied especially to separate organs, systems or tissues. The term "preventive medicine" is associated in the minds of most people with the work of legislatures and boards of health. This book seeks to extend the term more precisely to personal prophylaxis and to other pathological conditions than those due to contagion or infection. It is intended for the use of the medical profession.

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OVERCROWDING OF THE PROFESSION.

IN a recent number of the *New York Medical Journal* a signed editorial from the pen of Andrew F. Currier has appeared, on the subject of "Medical Practice as a Means of Livelihood." That this is a matter of vital importance to many practicing and prospective physicians is self-evident, and it is also apparent that more or less artificial means of regulating the situation are not likely to meet with the least success. Dr. Currier makes the following statement: . . . "I believe that every man who has intelligence enough to get a medical degree at the present time ought to be able to reckon with confidence that he will gain a comfortable living from it. Since there are so many who do not, ought we to encourage any but the exceptionally gifted or the exceptionally situated as to opportunity and means, to enter it? I think not."

He suggests two remedies. First, that other avenues of work than strictly medical practice should be cultivated, such, for example, as positions on health boards, and also that hospital positions, which indirectly lead to practice, should be so regulated that they could not be held indefinitely. A second remedy is suggested of limiting by legislation the yearly number of medical graduates, to the end of allowing the chosen few a broader and hence more lucrative field for their professional work.

We are not inclined to agree with this point of view. In the first place the world owes nobody a living, and there is certainly no good reason why every man who receives a medical degree should reckon with confidence upon a comfortable income simply because he has passed with success through the four years of a medical course. Nothing to our way of thinking could be more detrimental to the cause of medical progress than the assurance on the part of young graduates that four years of study, however arduous and successfully performed, are a guarantee of future success. The standard of admission to our medical schools, and the requirements after admission, may with justice be raised to any reasonable degree, but here the responsibility of the school stops.

There can, however, be no objection to the cultivation of lines of work not strictly medical by men primarily trained for practice. In fact, it is one of the hopeful signs of the times that physicians of good preliminary training are more and more taking up collateral branches, to the good, no doubt, of all concerned, thereby spreading the gospel of sound medical doctrine into various fields of work. Insurance companies, corporations burdened with numerous damage suits for personal injuries, manufacturing chemists, quarantine stations, hospital superintendencies, as well as health boards, are all affording physicians of good standing an opportunity beyond the scope of ordinary practice for the gaining of a livelihood. The more widely such work is undertaken by properly equipped medical men, the more surely will the dignity of the profession be elevated and its influence widened. That the medical school of the future will become a place of training for men who have no idea of practicing their profession in the ordinary sense of the term is becoming every day more evident. When we bewail the overcrowding of the profession, this fact should always be taken into account that there is an increasing number of positions to be filled, and that there is continually a demand for competent men for such positions. It is evident that we cannot all do as our forefathers have done, but, on the other hand, we, as physicians, may do many things which were not even thought of by them, and until we have done all these things well, it is hardly worth while to bewail the number of our competitors.

The suggested remedy of limiting the number of doctors by legislation is of a piece with limiting a man by law in the exercise of his freedom of action. We question whether so autocractic a proceeding is countenanced in any civilized country, and it certainly can never be with us. As already suggested, medical schools may and should continually raise their standards, but this is quite different from an attempt to legislate a man out of a profession for which he believes

himself fitted. Remedies for legitimate competition are not easy to find, nor are they to be in the least encouraged. The saving grace of medical practice, as of every other intellectual pursuit, is the freedom of its competition, and the fact that one can neither buy nor legislate himself into a position of authority. It is quite inevitable that many should go to the wall in medicine, as in other callings, which may be unfortunate for the individual, but is none the less essential to the future development of medicine as a profession calling for keen intellect and constant endeavor. Well worn as the adage, "room at the top" may be, it continues to have a very large element of truth. What happens to the great majority at the bottom in medicine, as in everything else, is certainly not a subject for legislation.

THE INOCULATION OF A CHIMPANZEE WITH SYPHILIS.

At the meeting July 28 last, of the French Academy of Medicine, Messrs. Roux and Metchnikoff presented a communication concerning some experimental researches upon anthropoid apes.[1] The most important of these investigations relates to the inoculation of a young female chimpanzee with syphilitic virus. Twenty-five days later this was followed by the development at the point of inoculation of an indurated sore. The development of this sore was followed in a few days by a bubo. Monsieur Fournier, who was asked to examine these manifestations, stated his opinion that they responded in all respects to the characteristics of the chancre and the bubo as observed in man, and in this opinion he was supported by other well-known syphilographers. His lucid exposition was summed up with the phrase, *Rien ne manque au tableau* — nothing is wanting to the picture. Before affirming that the important question of the possible inoculation of animals with syphilis had been definitely and affirmatively settled, he preferred at that moment, with scientific caution, to await the subsequent appearance of secondary or constitutional manifestations. This caution some of his colleagues seemed to regard as excessive, and were disposed to regard the question as already answered.

However this may be, we are now informed by a most competent witness that when he was in Paris about a month later, Metchnikoff sent one of his assistants to show him the chimpanzee. At that time the primary sore was healing, but skin lesions were pointed out to our informant as beginning to appear. In conclusion, the daily press published about ten days ago a cable from Paris announcing the death of this chimpanzee, and stating that she "succumbed to the malady" induced by the inoculation. Of this last statement we await confirmation. It is also stated that five other chimpanzees are being subjected to investigations having the same object in view.

The chimpanzee is one of the most anthropoidal, if not the most anthropoidal, of the monkeys. It is a somewhat rare and costly animal, and Messrs. Roux and Metchnikoff have been enabled to pursue these experiments by means of funds supplied through the agency of the Institute of France and the Fourteenth International Medical Congress. Similar inoculations have been attempted many times by others upon the lower orders of monkeys and upon other animals, but hitherto without definite results. The nearer relation of this particular monkey to man seems to be the qualifying difference, for the inoculations were not surrounded by any especial or exceptional precautions. One is led to conclude that the blood of the chimpanzee, from the point of view of the precipitation and agglutination of its serum, has close affinities to the blood of man.

M. Fournier sees in the success of these experiments, and in the possible inoculation of animals with syphilis, new and splendid horizons opening themselves before the syphilographer — the study and probable solution of many different problems, and among such those of therapeutics, of immunization, of vaccination. It is possible, he thinks, that we view the dawn of one of those discoveries, of which several have in the past come from the laboratory of Pasteur, which constitute at once a distinguished honor to science and a vast benefit to the human race. For the realization of such a prospect must we deplore the sacrifice of these apes!

[1] Bull. de l'Acad. de Méd., No. 30, 1903.

NEW OUT-PATIENT DEPARTMENT, MASSACHUSETTS GENERAL HOSPITAL.

It is fitting that the formal opening of the new Out-Patient Department at the Massachusetts General Hospital, together with the inspection of various other recent additions to the hospital, should be held on "Ether Day," October 16, a day so closely associated with the history of the institution. Invitations have been

sent by the trustees of the hospital to the friends of the institution to inspect on that day the new building for out-patients, which has recently been completed and put in service.

To those who have not recently paid a visit to the hospital this will afford an opportunity to see the very great changes and improvements which have taken place within the last few years. It is difficult for a hospital to keep pace with the demands made upon it for medical and surgical treatment, but there can be little doubt that this really elaborate out-patient building will for many years completely fulfill its function. For a number of years the old building in which ambulant patients were seen had proved wholly inadequate. The importance of work connected with patients not sufficiently ill to be treated in the hospital wards is growing yearly more apparent, and the Massachusetts Hospital has shown a most decidedly progressive spirit in establishing a department which certainly will prove a model for similar departments which are sure to follow in various other large institutions.

We extend our heartiest congratulations to the hospital for the completion of this much-needed building, and we have no doubt that the work done in it will redound still more to the credit of an institution already rich in achievement.

MEDICAL NOTES.

HONORARY DEGREES CONFERRED BY UNIVERSITY OF TORONTO. — At a special convocation, held Oct. 2, 1903, for the purpose of conferring honorary degrees in connection with the opening ceremonies of the new physiological and medical laboratories, the University of Toronto gave the degree of LL.D. to the following men: Dr. Henry Pickering Bowditch, who was unable to be present at the ceremony, Dr. William Williams Keen, Dr. William Henry Welch, Dr. William Osler, Dr. Russell Henry Chittenden and Dr. Charles S. Sherrington.

A PROFESSORSHIP OF ORTHOPEDIC SURGERY. — It is again reported that Mr. J. Ogden Amour intends to found a professorship in orthopedic surgery, to be endowed in the sum of one hundred thousand dollars.

AN OLD STORY IN A NEW DRESS. — The following appears in a recent French journal. It might be added, when the anti-vaccinator changes his opinions, then will "the Ethiopian change his skin and the leopard his spots":

Le Dr. Emmanuel Pfeiffer de Boston, un des plus fervents ennemis de la vaccination, ayant le courage de ses convictions, s'est rendu aux iles Galloupes pour s'exposer à la contagion de la variole; le résultat a été celui auquel on devait s'attendre; le docteur a contracté une variole très grave qui, pendant quelque temps, a mis sa vie en danger. L'expérience faite par cet anti-vaccinateur a eu pour résultat d'activer les lancettes vaccinatrices à Boston. Quant à l'expérimentateur, cela, dit-il, n'a changé en rien ses idées sur la contagion de la variole.

En effet, la difficulté de convaincre un anti-vaccinateur est de trouver un esprit qui puisse s'ouvrir à la conviction. — *Rev. d'Hygiène, August*, 1903.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Oct. 14, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 46, scarlatina 30, typhoid fever 16, measles 19, smallpox 0.

A WARNING AGAINST SWINDLERS. — An organized attempt at swindling has recently been unearthed in Boston. On the plea of soliciting funds for the Boston Floating Hospital, certain men have approached individuals and succeeded in certain instances in securing money. Such solicitations are not authorized by the authorities of the Floating Hospital, and the public should be warned against giving money except to persons with proper credentials.

NEW YORK.

HOSPITAL BEQUESTS. — By the will of Mrs. Mary Lewis, widow of Col. Edwin P. C. Lewis, and daughter of the late Edwin A. Stevens of Hoboken, N. J., are left, among other charitable bequests, $3,000 to Christ Hospital and $2,000 to St. Katharine's Home, both in Jersey City.

ROCKEFELLER APPLES FOR HOSPITALS. — The apples from the many orchards on the estate of John D. Rockefeller, near Tarrytown on the Hudson, which this year produced an enormous yield, are being sent to hospitals and institutions in New York.

REPORTS OF HEALTH DEPARTMENT. — The statistical reports of the Health Department for the month of September show the lowest death-rate of any month during 1902 or 1903, and possibly of any on record. In two of the weeks of the month the rate fell below 16, and the corrected rate below 15. The mortality recorded

represents an annual death-rate of 15.75, as against 17.28 for the month of August and 16.81 for September, 1902. The corrected death-rate, excluding non-residents and infants under one week old, was 15.18. Among the diseases which showed a decline in mortality were the following: The weekly average of deaths from scarlet fever decreased from 6.25 in August to 4.5 in September; the weekly average from measles, from 5.25 to 3.25; from whooping-cough, from 9 to 6.5; from pulmonary tuberculosis, from 145.75 to 133.75; from diarrheal diseases, from 257.75 to 151.5; from diarrheals under two years of age, from 225 to 133.25; from cancer, from 52.75 to 43.25; and from organic heart diseases, from 72.5 to 71. Among the diseases which showed an increased mortality were the following: The weekly average of deaths from diphtheria and croup increased from 24.75 to 28.75; from typhoid fever, from 14.75 to 16.25; from pneumonia, from 51.5 to 61.5; from broncho-pneumonia, from 32 to 36.5; from acute bronchitis, from 16.5 to 27; and from Bright's disease and nephritis, from 84.25 to 91.5.

A Centenarian. — W. H. Seymour of New York City, whose father and uncle were soldiers in the Revolutionary War, died at his country home at Brockport, N. Y., on Oct. 6, at the age of 101 years 2 months and 21 days, having been born on July 15, 1802. The records of the family appear to have been accurately kept, and it is stated that his age with that of his four predecessors in the line amounted to 428 years.

Attendance at Public Vacation Schools. — It is officially announced that the attendance in the public vacation schools during the past summer was 567,891, as against 405,169 in 1902, while the attendance at the playgrounds provided by the city was 3,346,291, as against 2,194,666 in the summer of 1902.

Tenement Houses. — In presenting his estimate, on Oct. 8, for the expenses of his department for the ensuing year, Tenement House Commissioner DeForest made the statement that his staff of inspectors have examined 43,580 buildings. During 1902 they supervised the erection of 643 new houses, the estimated cost of which was over $20,000,000, and the alteration of 1,468 old ones; and during the first six months of the present year, the erection of 699 new houses, at an estimated cost of $20,837,270, and the alteration of 1,266 old ones. While much has been accomplished in the way of reform, much yet remains to be done. There are still in Greater New York over 350,000 of the dark rooms, against which the law is expressly aimed, and an unknown number of cellar rooms occupied in tenement houses, which are forbidden as living rooms, as well as of bakeries, which the law proscribes in tenements.

NOTE FROM THE PHILIPPINES.

Work of Board of Health. — Summarizing the general sanitary work of the Board of Health during the month of May, the total number of inspections and reinspections of houses amounted to 204,277; and of cascoes and other water craft to 2,480. There were 19,854 houses cleaned as a result of sanitary orders, and 431 painted or whitewashed; 649 houses and 22 water craft were disinfected. A total of 15,410 yards were cleaned, repaved or repaired, and the contents of 1,470 cesspools and vaults were removed. During the month 672 sanitary orders were issued, of which 350 were complied with, and proceedings in 17 instances were pending in the courts. A total of 7,598 animals were inspected on arrival at the port; 8,212 were inspected at the abattoir, of which number 21 were condemned. The crematories disposed of 15 543 dead animals and birds, which number included 9,413 rats, and, in addition, 2,121 loads of refuse. The excessive number of animals requiring disposal was due to the loss of animal life in the Santa Cruz fire. There were 17,432 persons vaccinated in the city of Manila, and 125,725 units of vaccine virus issued for use throughout the islands.

Obituary.

WILLIAM JOHNSON DALE, M.D.

Dr. William J. Dale died at Andover, October 7, in his eighty-ninth year. He had been in poor health for some years and had recently suffered from a cerebral hemorrhage.

He was born in Gloucester in 1815. His father was a surgeon in the War of 1812, his paternal grandfather, Ebenezer Dale, fought at the battle of Bunker Hill, and his maternal grandfather, William Johnson, at the battle of Lexington. He graduated at Harvard College in 1837, and at the Harvard Medical College in 1840. He practiced his profession with success in Boston. In June, 1861, soon after the outbreak of the War of the Rebellion, he was appointed by Governor Andrew surgeon-general of Massachusetts and commissioned with the rank of colonel. Late in that year he was appointed an acting assistant surgeon of the United States Army. In October, 1863, he was promoted by

Governor Andrew to the rank of brigadier-general. All through the Civil War the responsibility for providing proper medical officers for the Massachusetts regiments, the general supervision of all matters relating to the medical staff, the care of the invalided sick and wounded fell upon General Dale. For many years after the war he had charge of the distribution of state aid and of invalided soldiers

He was an admirable organizer and a first-rate executive, and his duties were discharged with great credit to himself and great advantage to the state, and at the same time with a sympathetic regard for those dependent upon his decisions. An increasing deafness prevented private practice, and gradually interfered with the discharge of his public duties. He resigned his office in 1876, and presently withdrew to the family estate, a farm of about one hundred acres, in North Andover, which had descended in the Johnson family from the original Indian grant in 1636.

Dr. Dale was a handsome man, of large stature and fine presence,— such an one as would anywhere attract attention. He outlived all his family. His only surviving son, W. J. Dale, Jr., who was at one time assistant postmaster of Boston and subsequently a member of the State Board of Railroad Commissioners, died in 1896.

Correspondence.

A LAWYER'S VIEW OF "PRIVILEGED MEDICAL COMMUNICATIONS."

BOSTON, Oct. 2, 1903.

MR. EDITOR: I have read with considerable interest the papers on "Privileged Medical Communications," published in the JOURNAL Sept. 3, 1903. Mr. Stimson makes out a pretty strong case for the law as it stands at present. I do not think, however, the policy of having such communications privileged ought to be condemned because the New York law has worked poorly. I believe that communications between physician and patient ought to be privileged just as much as those between attorney and client. At present the physician and his patient are at the mercy of attorneys who may be unscrupulous and may put in evidence which is immaterial to the issues in a case, solely for the effect to be produced upon a jury. In the excitement of a trial the temptation to do this sort of thing may be pretty great. On the other hand, if such communications are privileged the physician will be the judge whether certain communications made to him by his patient, which may not be material to the case, shall or shall not be disclosed. And the physician being a witness, impartial, and not under the same excitement as an attorney, I think can be counted on to decide the propriety of giving such testimony more fairly than an attorney.

Where confidential communications are by law made inadmissible in evidence, or "privileged," the purpose is to shield the person whose interests are at stake — not to excuse the other party to the communication from divulging it. So in the case of conversations between attorney and client — the privilege of excluding them is that of the client and not of the attorney. The attorney is excused from testifying, not for his own sake, but because his testimony may injure his client. And this is the way in which the New York law operates in the case of physicians. It is the patient who has the power to decide what shall be told and what withheld, and not the physician. The faults of the New York law are obvious, and outweigh its advantages. It increases the difficulty of defending actions for personal injuries, and this tends to encourage the bringing of such suits for blackmailing purposes. I think few lawyers of standing would favor it.

But a law making medical communications privileged in the interest of the medical profession would stand on a different footing, and would be approved by many members of the legal profession. Such a law roughly should allow the physician to refuse to testify as to matters that in his opinion have no bearing upon the issues raised in the case at bar. Of course, this leaves the physician to pass upon the materiality of the evidence, but the question is one which he is probably better fitted, by reason of his professional knowledge, to decide than the court He has, supposedly, no interest in the outcome of the case. If he believes justice requires the disclosure he can make it; but if he thinks a question is intended to prejudice a party by dragging in irrelevant matter, he can plead the privilege of his profession, and refuse to answer.

Moreover, there should be exceptions in certain cases, as Dr. Cheever suggests. And yet, his exception, including cases where the patient is unwilling to have the testimony go in, I think, is too far-reaching, because it practically would put the law on the same basis as that in New York. His third exception "to expose crime" is rather too narrow. It would be better to make no change in the existing law so far as it affects criminal cases.

Two reasons suggest themselves for confining the proposed change to civil matters. The first is that in criminal cases the most searching and thorough examination of all evidence should be encouraged; and second, that such legislation being experimental, it is just as well to confine it at the outset within rather narrow limits.

Truly yours,

JOHN NOBLE, JR.

AN OVERWORKED THEORY.

PHILADELPHIA, Oct. 10, 1903.

MR. EDITOR: In reference to your courteous editorial criticism of my article in your columns upon the "Ill Health of Parkman" will you permit me in view of the anomalous condition (criticism by one's own host before the other guests) a few words of reply? The first word of my protest must refer to your commendation of my method as "scientific" and at the same time taking away the essential qualities that make an opinion scientific. If my theory is "carried to an extreme"; if few "follow me"; if my theory is "somewhat overworked"; if my "attitude is extremely radical"; if you carefully abstain from assenting that there is any truth whatever in the "theory" — then of course the theory and its author are not scientific. The essence of science is accuracy in gathering and stating facts and in logical induction from them. To be scientific is certainly to avoid theorizing, extremism, hobby-riding, etc. I have sought to be scientific; I believe I have been; I value at the very highest my own consciousness that I have been, and next to that the opinion of my professional colleagues that I have succeeded. You charge me with what all scientists recognize as the greatest scientific sin. I think this was both unnecessary and unwarranted.

In the same mail that brought me your editorial comment was the following letter. I could furnish you with the details of almost any number of such cases:

"916 PINE STREET, PHILADELPHIA.

"MY DEAR DR. GOULD: After all the cases you have reviewed one case more or less can count for little, but I would like to give you mine at least as an illustration. I was an omnivorous reader from early childhood, and early had irritable headaches. They were laid to various causes, and when I was twelve to fourteen my eyes began to 'trouble me.' I was in an Asiatic town, where my father (Rev. W. F. Williams, D.D.) was a missionary, and

I remember he could not understand why eyes which saw so well and were without inflammation or a touch of the all-prevalent ophthalmia should give trouble. With cessation of reading the 'trouble' disappeared. At sixteen I came to this country and was a year on a farm at work and had no trouble and no headache. My study began again at seventeen (Andover and Amherst), entering journalism after graduation. From seventeen until thirty-one, when I was fortunate enough to fall into the hands of a physician who put me into glasses, I had at intervals what I called 'bilious attacks'—frightful headaches and really indescribable sufferings. These attacks came and went apparently without reason and the headaches were disabling. I see now that they were worst when I had office newspaper work and lightened when reporting. The first requires steady eye work and the latter very little, in active open-air work. With glasses my headaches and other peculiar sufferings disappeared, never to return. I may add that as my accommodation disappeared with age my nerves have seemed to be steadier. The last three or four years I am conscious of the lessening of a certain amount of irritability.

"For myself it is as clear as any fact in my personal experience that my health as a writer has turned on being 'glassed.'

I am cordially,

"Talcott Williams."

This gentleman is not a patient of mine; his letter was spontaneously written; he is a man upon whom one of our great universities conferred the degree of LL.D. because of his high intellectual, literary and scientific character.

"One swallow does not make a summer"? Would you care any more for hundreds? For fifteen years I and many others have published clinical reports of such cases, and the ignorers of "an overworked theory" have not heard. In the city of Boston there are to-day thousands of sufferers from "sick," "bilious" or "nervous" headache — such as most of the twelve patients (Mrs. Carlyle, Wagner, Carlyle, Huxley, Nietsche, Margaret Fuller, etc.) were afflicted with. I have — you compel me to say it — cured thousands of just such cases with spectacles alone. If I fail to do so I tell my patients frankly my work has not been well done. If I go over it with greater care I am sure to find my error. You may say that others do not report the matter so. I answer that there is a perfect reason for that, and it is suggested in the enclosed pamphlet, entitled *Sixty-Eight Reasons*, etc. A second answer would be that many other physicians do not fail.

If you will pardon me the frank word, I would like to add that my evidence and accuracy in reporting, together with my experience with some ten thousand cases, should not be called in doubt so lightly. Has the writer of your editorial a greater special experience? He should at least have specified in detail wherein I have "carried to an extreme" and "overworked my theory" and been "extremely radical." I distinctly deny the charges and re-emphasize the entire contention of my writings upon the subject—namely, that the attitude of twenty-eight years on the part of many members of the profession which cries *Exaggeration, Theorizing, etc.*, the attitude of calmly and scornfully ignoring the theory of eye-strain reflexes, is not scientific and has become the most striking illustration I know of "overworking a theory" and of "carrying to an extreme." It is a crime against millions of sufferers who in this time have failed to get relief at the hands of their physicians. At the risk of ruining my little reputation as a scientific man I for one will no longer adhere to this old "overworked theory." The truth for which I contend is understated and is far more important and frequently exemplified than I have represented. If it were not, how could I dare to say so and practice medicine? If oculists advocating this theory did not generally and daily cure these diseases, how could they for a month succeed in practice? The implication need not be more definitely stated that there is some fault in the method of those who do not succeed in giving relief. "Overworked theories" come home to haunt the overworker.

Respectfully yours,

Geo. M. Gould, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Oct. 3, 1903.

Cities.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York	3,785,156	1,114	367	29.08	11.22	2.87	9.96	1.35
Chicago	1,885,000	467	129	28.90	6.21	1.71	10.92	3.42
Philadelphia	1,378,527	400	99	25.75	6.50	2.00	5.00	1.75
St. Louis	618,481	—	—	—	—	—	—	—
Baltimore	533,712	171	52	27.48	11.11	4.09	5.26	2.92
Cleveland	427,731	—	—	—	—	—	—	—
Buffalo	387,994	—	—	—	—	—	—	—
Pittsburg	351,745	133	49	35.34	12.78	7.50	3.76	4.50
Cincinnati	335,140	—	—	—	—	—	—	—
Milwaukee	315,307	—	—	—	—	—	—	—
Washington	295,103	—	—	—	—	—	—	—
Providence	191,230	69	19	31.88	5.80	1.45	15.93	1.45
Boston	603,163	173	61	28.32	9.82	1.73	13.29	2.89
Worcester	132,044	43	14	32.55	4.65	4 65	13.95	2.32
Fall River	115,549	37	17	35.12	8.10	—	24.30	2 70
Lowell	101,959	32	15	15.62	3 12	—	9.37	3.12
Cambridge	98,639	28	10	28.57	—	—	14.28	—
Lynn	72,497	18	3	5.55	—	—	5.55	—
Lawrence	69,766	19	6	47.37	5.26	5.26	15.78	10.52
Springfield	69,389	16	7	50.00	—	6.25	18.75	—
Somerville	68,110	10	3	20.00	20.00	—	—	—
New Bedford	67,198	20	7	45.00	—	5.00	25.00	5.00
Holyoke	49,286	18	12	27.77	—	—	27.77	—
Brockton	44,873	8	3	50.20	—	—	—	—
Haverhill	42,104	6	—	—	16.67	—	—	—
Newton	37,794	8	2	12.50	—	—	12.50	—
Salem	36,876	19	7	15.79	10.52	—	—	5.26
Malden	36,286	4	3	25.00	—	—	—	—
Chelsea	35,876	9	2	—	11.11	—	—	—
Fitchburg	35,069	—	—	—	—	—	—	—
Taunton	33,656	7	3	57.20	—	—	42.90	—
Everett	28,620	7	2	—	—	—	—	—
North Adams	27,862	8	3	75.00	—	37.50	25.00	—
Gloucester	26,121	—	—	—	—	—	—	—
Quincy	26,042	4	1	—	—	—	—	—
Waltham	25,198	3	2	—	—	—	—	—
Brookline	22,608	4	—	25 00	—	—	—	25.00
Pittsfield	22,589	5	1	40.00	—	—	—	5.00
Chicopee	21,051	3	3	—	—	—	—	—
Medford	20,902	3	—	33.33	—	—	—	—
Northampton	19,883	—	—	—	—	—	—	—
Beverly	15,302	6	2	16.67	—	—	16.67	—
Clinton	15,161	6	4	—	—	—	—	—
Leominster	14,806	—	—	—	—	—	—	—
Newburyport	14,478	1	0	100.00	—	100.00	—	—
Woburn	14,300	—	—	—	—	—	—	—
Hyde Park	14,175	—	—	—	—	—	—	—
Adams	13,745	3	1	—	—	—	—	—
Attleboro	13,677	—	—	—	—	—	—	—
Marlboro	13,609	4	2	50.00	—	—	25.00	—
Melrose	13,600	4	1	—	—	—	—	—
Westfield	13,418	2	—	—	33.33	—	—	—
Milford	13,129	—	—	—	—	—	—	—
Revere	12,722	2	1	—	—	—	—	—
Framingham	12,584	4	1	25.00	—	—	25.00	—
Peabody	12,179	—	—	—	—	—	—	—
Gardner	11,928	—	—	—	—	—	—	—
Weymouth	11,844	5	0	—	—	—	—	—
Southbridge	11,268	—	—	—	—	—	—	—
Watertown	11,077	2	—	50.00	—	—	—	—
Plymouth	10,730	—	—	—	—	—	—	—

Deaths reported, 2,908; under five years of age, 916; principal infectious diseases (smallpox, measles, scarlet fever, cerebro-spinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 830, acute lung diseases 251, consumption 345, scarlet fever 13, whooping cough 15, cerebro-spinal meningitis 7, smallpox 16, erysipelas 1, puerperal fever 8, measles 8, typhoid fever 64, diarrheal diseases 278, diphtheria and croup 75.

From whooping cough, New York 5, Chicago 1, Philadelphia 3, Baltimore 1, Pittsburg 3, Boston 1, Malden 1. From erysipelas, Chicago 1. From smallpox, Philadelphia 5, Pittsburg 11. From scarlet fever, New York 2, Baltimore 3, Pittsburg 4, and Worcester, Lowell, Lawrence and North Adams 1 each.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Sept. 19 the death-rate was 16.5. Deaths reported, 4,775; acute diseases of the respiratory organs (London) 128, whooping cough 79, diphtheria 40, measles 35, smallpox 5, scarlet fever 39.

The death-rate ranged from 4.5 in Handsworth to 30.2 in Middlesbrough; London 15.8, West Ham 17.9, Brighton 15.0, Portsmouth 12.6, Southampton 15.6, Plymouth 12.1, Bristol 12.8, Birmingham 18.5, Leicester 14.9, Nottingham 16.5, Bolton 17.7, Manchester 18.7, Salford 15.0, Bradford 13.4, Leeds 17.2, Hull 20.3, Newcastle-on-Tyne 23.5, Cardiff 10.9, Rhondda 11.8, Liverpool 21.0, Bournemouth 8.3, Wigan 18.5.

METEOROLOGICAL RECORD.

For the week ending Oct. 3, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S.. 27	29.95	65	73	57	89	86	88	S	S W	9	12	F.	O.	T.
M.. 28	30.03	56	63	49	73	62	68	W	N W	14	9	C.	C.	.98
T.. 29	30.26	48	53	43	63	52	58	N W	W	8	6	O.	C.	0
W.. 30	30.33	55	68	42	70	52	61	W	S W	11	17	C.	C.	0
T.. 1	30.12	65	76	54	78	71	74	S W	S W	10	10	O.	O.	0
F.. 2	30.16	64	72	55	87	79	83	W	N E	9	10	O.	C.	.13
S.. 3	30.37	56	60	51	82	76	79	N	E	5	5	C.	C.	0
☞	30.17		66	50			73							1.11

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING OCT. 10, 1903.

T. W. RICHARDS, surgeon. Commissioned surgeon, with rank of lieutenant-commander from March 3, 1903.

B. L. WRIGHT, assistant surgeon. Ordered to the Naval Hospital, Pensacola, Fla.

F. A. RICHARDSON, acting assistant surgeon. Appointed acting assistant surgeon, with rank of lieutenant (junior grade) from Sept. 29, 1903.

W. N. MCDONNELL, acting assistant surgeon. Ordered to the Naval Academy.

D. N. CARPENTER, surgeon. Commissioned surgeon with rank of lieutenant-commander, from March 3, 1903.

E. J. GROW, surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the "Mohican."

C. N. FISKE, assistant surgeon. Detached from the "Mohican" and ordered home and to await orders.

L. H. SCHWERIN, acting assistant surgeon. Detached from the "Southery" and ordered to the "Yankton."

J. T. MILLER, acting assistant surgeon. Detached from the Navy Yard, Mare Island, Cal., and ordered to the Naval Hospital, Mare Island, Cal.

J. COWAN, pharmacist. Detached from the Naval magazine, Iona Island, N. Y., and ordered to Washington, D. C., for examination for retirement, and then home and to wait orders.

E. H. MARSTELLER, surgeon. Detached from the "Panther," and ordered home and to wait orders.

J. C. THOMPSON, passed assistant surgeon. Ordered to additional duty at the Navy Yard, Puget Sound, Washington.

W. H. BELL, passed assistant surgeon. Detached from the "Yankton" and ordered to the Navy Yard, Portsmouth, N. H., for additional duty on "Southery."

RECENT DEATHS.

WILLIAM JOHNSON DALE, M.D., M.M.S.S., died in North Andover, Oct. 7, 1903, aged eighty-eight years.

CORNELIUS SHEPERD, M.D., of Trenton, N. J., died on Oct. 7. He was born in Bucks County, Pa., and was a graduate of the Medical Department of the University of Pennsylvania. Dr. Sheperd took much interest in public affairs, and was active in establishing the present school system of New Jersey.

DAVID FRANKLIN, M.D., one of the most prominent physicians in the Harlem District of New York, died from appendicitis, after an operation, on Oct. 7. He was forty-eight years of age, and was graduated from the Medical Department of the University of the City of New York. Dr. Franklin served on the House Staff of Bellevue Hospital, and later practiced for a number of years in California. He was president of the Harlem Medical Association.

OSSIAN W. GOSS, M.D., of Lakeport, N. H., died Oct. 8. He received his medical education at the Harvard Medical School, and was graduated in 1882. He was a leading physician of the town in which he lived and in which he had spent the greater part of his life.

ALBERT NOTT, M.D., M.M.S.S., died in West Newton, Oct. 10, 1903, aged fifty-six years.

BOOKS AND PAMPHLETS RECEIVED.

Manual of Practical Anatomy. By D. J. Cunningham, M.D. (Edin. et Dubl.,) D.Sc., LL.D., D.C.L. (Oxon.), F.R.S. 2 volumes. Third edition. Illustrated. J. B. Lippincott Company: Philadelphia. 1903.

The Treatment of Chronic Catarrhal Deafness (Otitis Media Catarrhalis Chronica). By George W. Hopkins, M.D., of Cleveland, Ohio. Reprint. 1903.

The Diagnostic Value of Abdominal Rigidity. By Joseph A. Blake, M.D., of New York. Reprint. 1903.

A Case of Progressively Developing Hemiplegia, Later Becoming Triplegia, Resulting from Primary Degeneration of the Pyramidal Tracts. By Charles K. Mills, M.D., and William G. Spiller, M.D., of Philadelphia. Reprint. 1903.

Exhibition of a Specimen of Abdominal Pregnancy Removed at the end of Twenty-one Months by Coeliotomy. By Charles P. Noble, M.D., of Philadelphia. Reprint. 1903.

A Study of the Degenerations and Complications of Fibroid Tumors of the Uterus from the Standpoint of the Treatment of these Growths. By Charles P. Noble, M.D., of Philadelphia. Reprint. 1903.

The Treatment of the Peritoneum in Diffuse Peritonitis. By Joseph A. Blake, M.D., of New York. Reprint. 1903.

Colchicum in the Treatment of Gout. By Charles C. Ransom, M.D., of New York. Reprint. 1903.

The Rôle of the Cystoscope in the Diagnosis and Treatment of Some Diseases of the Urinary Tract. By Charles P. Noble, M.D., of Philadelphia. Reprint. 1903.

The Significance of the Temperature in the Diagnosis of Extra-Uterine Pregnancy during the Period of Collapse from Hemorrhage. By Charles P. Noble, M.D., of Philadelphia. Reprint. 1903.

Preliminary Report of an Operation for Abdominal Pregnancy of Twenty-one Months' Duration. By Charles P. Noble, M.D., of Philadelphia. Reprint. 1903.

Adeno-Myome des Uterus. Von Thomas S. Cullen. Illustrated. Verlag von August Hirschwald, Berlin. 1903.

Transactions of the American Pediatric Society. Fourteenth Session. Held at Boston, May 26, 27 and 28, 1902. With Addenda from the Thirteenth Session and an Index, Vols. i–xiv, inculsive. Edited by Walter Lester Carr, M.D. Reprinted from The Archives of Pediatrics. 1902.

Nose and Throat Work for the General Practitioner. By George L. Richards, M.D. Illustrated. International Journal of Surgery Co npany, New York. 1903.

Surgery, Its Theory and Practice. By William Johnson Walsham, F.R.C.S. (Eng.), M.B. and C.M. (Aberd.). Eighth Edition. Illustrated. By Walter George Spencer, M.S., M.B. (Lond.), F.R.C.S. (Eng.). P. Blakiston's Son & Co., Philadelphia. 1903.

Functional Diagnosis of Kidney Disease with Especial Reference to Renal Surgery. Clinical Experimental Investigations. By Dr. Leopold Casper and Dr. Paul Friedreich Richter. Translated by Dr. Robert C. Bryan and Dr. Henry L. Sanford. P. Blakiston's Son & Co., Philadelphia. 1903.

Physical Diagnosis of Diseases of the Chest. By Richard C. Cabot, M.D. Second Revised Edition. Illustrated. New York: William Wood & Co. 1903.

Right-Sided Cardiac Hydrothorax. By Alfred Stengel, M.D., of Philadelphia. Reprint. 1901.

History of the Evolution of the Brain. By Charles H. Hughes, M.D., of St. Louis, Mo. 1903.

On a Method by Which the Eggs of a Sea-Urchin (Strongylocentrotus Purpuratus) can be Fertilized with the Sperm of a Starfish (Asterias Ochracea). By Jacques Loeb. University of California Publications, Vol. I, No. 1. 1903.

The Medical Epitome Series. Physics and Inorganic Chemistry. A Manual for Students and Practitioners. By Alexius McGlannan, M.D. Series edited by V. C. Pedersen, A.M., M.D. Illustrated. Lea Brothers & Co., Philadelphia and New York. 1903.

The Ill Health of Richard Wagner. By George M. Gould, M.D., Philadelphia. Reprint.

The University of Chicago. The Decennial Publications. The Structure of the Glands of Brunner. By Robert Russell Bensley. Illustrated.

Transactions of the American Otological Society. Thirty-sixth Annual Meeting, Washington, D. C., May 12 and 13, 1903. Vol. viii. Part ii. Mercury Publishing Company, New Bedford, Mass.

Case of Splenomedullary Leukæmia Successfully Treated by the use of the Röntgen Ray. By Nicholas Senn, M.D., of Chicago, Ill. Reprint. 1903.

Some Problems in the Major Surgery of the Kidneys; with a Report of Cases. By Joseph A. Blake, M.D., of New York. Reprint. 1903.

Original Articles.

FURTHER OBSERVATIONS ON CERVICAL DISLOCATION AND ITS REDUCTION.

BY G. L. WALTON, M.D., BOSTON.

CERVICAL dislocation is not a mere medical curiosity, but a pathological condition likely to appear in the practice of any physician or surgeon. Its pitiable results are generally, perhaps always, capable of speedy, safe and complete amelioration. It occurs with sufficient frequency to justify every practitioner in familiarizing himself with the diagnostic features and the method of reduction. The limit of time after which operation is contraindicated has yet to be determined; it certainly exceeds six months.

The frequency of this accident is shown by the fact that, in addition to the eight cases whose details I have previously published,[1] at least as many other cases have come under my observation not presenting peculiarities worthy of separate description. All but three of these cases appeared at the Massachusetts General Hospital.

My attention was first directed to the importance of finding an efficient method of reduction by the case in Dr. Warren's service, in which the most vigorous traction with manipulation failed, but spontaneous reduction was effected later by involuntary movement on the part of the patient following the application of cold water to the spine. This case illustrates the futility of traction and at the same time shows the ease with which reduction can be effected if the proper movements are made. Such movements are not likely to be made voluntarily by the patient on account of the instinctive fear of injury, though in the case of Blasius, a child on the way home from an unsuccessful operation is said to have reduced its own dislocation by pressure upon the neck, the head and shoulders being fixed.

Among the methods practiced prior to 1893 none seemed quite to meet the requirements. Traction with or without abduction and rotation was the keynote. The method proposed by Hueter[2] and favored by Stimson[3] seemed most reasonable; this method consisted of abduction and rotation without traction. Abduction, however, may fail to free the displaced articular process, which is held by the ligaments firmly locked against the anterior surface of the articular process of the vertebra below.

The observation of Dr. Warren's remarkable case induced me to make a careful study of the vertebræ. This study resulted in the conclusion that dorso-lateral flexion, combined if necessary with slight rotation (to enable the upper articular process to pass the brim of the lower articular process), would fulfil the requirements, the vertebra being afterward rotated into place as by the old methods. This plan was first suggested to Dr. Richardson, who demonstrated its efficiency upon the cadaver, then to Dr. Beach, in whose service the next case appeared at the Massachusetts General Hospital. The details of Dr. Beach's case, with photographs before and after operation, successfully performed by this method, were reported in this JOURNAL.

This method has since received further authoritative surgical endorsement.[4]

Dr. Mixter has recently reduced by this method a case of six months' standing resulting from a railway accident. The final outcome of this case it is too soon to report, as the head is still in plaster, but in the normal position.

I have seen two other cases which have slipped back during the etherization preparatory to operation. One of these was a unilateral case in Dr. Warren's service. The other case was that of a young man whose head was bent into the typical position of left unilateral dislocation during a football scrimmage. I saw him in consultation with Dr. Sherman of West Newton, who was immediately summoned. It was decided to etherize the following morning, and Dr. Perkins, the regular attendant, into whose hands the case passed, and who coincided in this opinion, reports that during etherization a sudden movement on the part of the patient restored the head to its normal position.

The following case is of interest on account of its etiology, as well as illustrating the ease with which spontaneous reduction may take place while the patient is relaxed in sleep:

CASE. C. V., twenty-eight, an architect, a tall man of slender build and long neck, active in movement, but not especially athletic, consulted Dr. Paul (at whose request I also saw him) Dec. 3, 1901, for a displacement of the neck which he had produced three hours before by a violent movement made during the act of brushing the hair with military brushes. The patient presented the characteristic attitude of right unilateral dislocation; the head was tilted as well as rotated to the left, showing that the articular process had not fallen into the intervertebral notch. Operation was advised and accepted, and the patient entered the Massachusetts General Hospital in Dr. Warren's service. On awaking the following morning the patient found his head restored to its proper position, the spontaneous reduction having occurred during sleep. No further treatment was needed.

Dr. Beach has kindly furnished me the following reports of two other cases coming under his observation:

CASE. Patient, a child between six and seven years old, living in Edgartown; was brought to me one week after a fall from a hammock. It was not known how she struck the earth, but her neck was stiffened by the tenderness and rigidity of the muscles on each side, and permitted very little motion of the head. When examined there was a distinct and considerable projection

[1] Boston Med. & Surg. Journ., March 21, 1889; *Idem*, May 8, 1890; *Idem*, Dec. 7, 1893. Journ. Nervous and Mental Diseases, 1889. International Clinics, 1892, 2d series, p. 207.
[2] Langenbeck's Archiv, Bd. IX., s. 946
[3] Fractures and Dislocations. New York, 1888.
[4] Keen in Dennis' System of Surgery, 1895. International Text Book of Surgery, Warren, Gould, 1900. Scudder: The Treatment of Fractures, fourth edition.

of the bodies of two vertebræ into the pharynx as seen from the mouth. There was also a distinct concavity on the dorsum of the neck at a point corresponding with the second and third cervical spinous processes. No attempt was made at reduction on account of the change in the rigidity of the muscles following the accident. I sent word to her attending physician, Dr. Thomas J. Walker of Edgartown, that I hoped he would preserve the anatomical appearances by a plaster cast. Before that could be obtained spontaneous reduction took place, as will be seen by the following quotation from Dr. Walker's letter of July 1:

DEAR DOCTOR: I am very sorry to report to you that the time when I could have made a valuable cast of the injury of our little patient had gone by before I got time to attend to it. She did not get any sleep from 4 A.M. Saturday until that night, when she slept very soundly, during which sleep no doubt the system became thoroughly relaxed. On my visit in the morning (Sunday) I found the cervical vertebræ in perfect position and free motion of the head in every direction.

(Signed) T. J. WALKER, M.D.

CASE. C. McL. entered the Massachusetts General Hospital May 8, 1890. Seventeen days ago, while running around a corner, turned her head sharply, upon which it was caught, and it has remained in that position since. Has had considerable pain in neck and head. Patient, an apparently healthy child, walks about with ease. Head in position of decided wry-neck, turned sharply to the right, sterno-mastoids flaccid, slight amount of antero-posterior motion to head, lateral motion very slight, head cannot be brought to median line, spine of third vertebræ felt out of position one-half inch from median line to the left. Right side higher than left. Right side of back of neck concave, left side convex.

May 18. Poultice to neck after consultation with the staff. She was given ether, breathed quietly for a few seconds, then struggled suddenly and the dislocation was reduced. Motion of the head possible in all directions.

May 19. Head fairly moveable, but with some pain.

May 20. Head in good position, supported by tin internal angular splint.

May 21. Splint not satisfactory. Head resumes the former position.

May 22. Patient in bed, poultice applied.

May 23. Moves head quite freely and without pain.

June 1. Poultice omitted.

June 2. Neck much stiffer, poultice applied.

June 6. Mobility returning. The motion varies much on different days. It has been noticed that when patient is asleep the head is freely movable.

June 10. Patient measured for wry-neck apparatus.

June 12. To return in two weeks for apparatus.

Nov. 10. Returns wearing apparatus. Can move head freely, no deformity. Dispense with apparatus.

Nov. 20. Perfect result. Moves head freely in all directions. No pain or tenderness, no deformity or displacement.

In the seven cases, then, coming to my knowledge since proposing this method of reduction, two have been replaced in sleep, three during etherization and two by the operation itself.

The success of the method in the cases which came to operation, together with the general lack of familiarity with the subject, will perhaps justify a recapitulation of the salient features of this dislocation and its relief.

Mechanism of the dislocation. — In the lumbar and dorsal regions the articular processes are so upright that dislocation can hardly occur without fracture. But the articular processes in the cervical region are so nearly horizontal that a process of one vertebra can readily slip forward over that of the vertebra below and fall into the intervertebral notch. More rarely both of the articular processes of a vertebra may be displaced, probably successively rather than simultaneously.

With regard to the position assumed by the head in these cases, let us suppose an articular process on the left has slipped over; the head will be rotated with the face to the right. If the articular process has slipped down into the notch the head will be tilted to the left, the face being still rotated to the right. If the articular process has become caught on the crest of the process below, the head will be tilted to the right as well as rotated to the right. *The side on which dislocation has occurred can always be determined, therefore, by the direction of rotation; the question whether the articular process has slipped into the notch* (a matter of secondary importance, inasmuch as the movement of reduction is the same in both cases) *may be determined by the tilting of the head.* In case bilateral dislocation has occurred, the head will be carried forward and tilted directly backward.

Diagnosis. — The only conditions with which dislocation is likely to be confused are torticollis and vertebral disease (tubercular caries). In case of torticollis, assuming the head to be rotated to the right and the head tilted to the left, this movement will have been produced by the sterno-mastoid muscle on the left, which will therefore be contracted. If this position is assumed in unilateral dislocation, on the other hand, the left sterno-mastoid will be lax, but the right will be put more or less upon the stretch. In cervical caries the history is the important diagnostic factor.

In the majority of cases of unilateral dislocation no paralysis occurs, sufficient of the lumen being left for the safe passage of the spinal cord, the nerve roots also escaping pressure. In the unilateral cases coming under the writer's observation, paralysis (obviously from root pressure) occurred in two only. In the case of bilateral dislocation spastic paralysis of the lower extremities indicated pressure upon the spinal cord itself.

Operation. — The method of reduction will be made clear by the following diagram (Fig. 1):

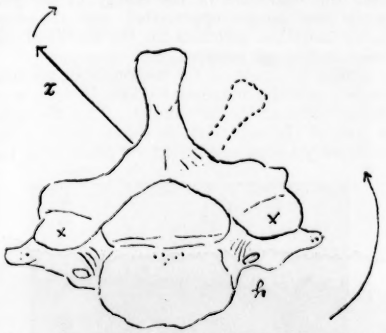


Fig. 1. Diagram of upper surface of lower vertebra, arrows indicating movements for reduction.

This diagram shows the upper surface of the lower of the two vertebræ concerned, that is, the one in normal position. The articular processes of this vertebra are marked XX. The left articular process of the vertebra above having slipped into the intervertebral notch (Y), the situation of the spinous process of the dislocated vertebra will be indicated by the dotted lines. The direction in which the head must be tilted for reduction is indicated by the line Z (in other words, if the patient is facing north the head must be tilted southeast). Slight rotation in the direction of the short curved arrow on the right of the diagram may be necessary to free the process. After the articular process is freed, rotation into place in the direction of the long curved arrow on the left of the diagram will complete reduction. In case the right articular process is displaced by the dislocation, these movements must be reversed.

The patient should be in the sitting position for the operation, and the head should be rocked without traction, for traction only lessens the effectiveness of the fulcrum necessary to reduction.

LESIONS THAT AUGMENT THE DEVELOPMENT OF TETANUS AND OTHER INFECTIONS IN GUNSHOT WOUNDS.

BY LOUIS A. LAGARDE, M.D., WASHINGTON, D.C.

The object of this paper is not so much to discuss the lesions that predispose to infection in gunshot wounds as it is to point out the histological anatomy of such wounds as revealed by microscopic sections.

Gunshot wounds are often referred to as punctured, penetrating or perforating wounds, such as are apt to be inflicted by any blunt instrument wielded with sufficient force. This idea is correct only within limits. A punctured wound from a blunt instrument exhibits lacerations and contusions in and immediately around the area of injury, while a punctured wound by a bullet propelled by a certain degree of velocity will exhibit loss of tissue and lacerations, not only in the immediate vicinity of the channel made by the projectile, but lesions will appear in the parts beyond to an extent dependent upon:

(1) The sectional area of the bullet.
(2) Its velocity.
(3) The resistance encountered on impact.

The greater the velocity or sectional area of the bullet, the greater will be the lesion in the surrounding tissues; and in those instances when the velocity is great, and the resistance on impact is unyielding, as in the case of a ball colliding with the shaft of a long bone like the tibia or femur, the destructive effects are enormous. These effects are so extensive that the wounds produced in this way are referred to as explosive wounds, or wounds showing explosive effects. It is not necessary to resort to the latter class of wounds to study the lesions that are thus created; in fact, microscopic sections of gunshot wounds in soft parts reveal all the characters of gunshot wounds sufficiently for the purpose of study.

Aside from the microscopic studies of the contused area, we know that the tissues are injured beyond the track of the bullet by certain appearances, which reveal themselves in the history of such cases. Thus slough often occurs in the skin beyond the margins of entrance and exit. Later, when healing is well along, a cord marking the track of the bullet running in the soft parts between the two external wounds is easily discernible to the sense of touch.

In recent studies upon the character of the various tissue lesions Strick has shown that hematomata especially predispose to the development of infections. He was able to show that hematomata in wounds increase the susceptibility to infection from tetanus a thousand times more than exists in a clean incised wound. More recently we have demonstrated that burn, as in toy-pistol wounds, adds to the susceptibility, and that animals infected in a cut made by a red-hot knife, with a certain spore mass of tetanus, died in every case, while animals similarly infected in incised wounds made with a cold knife lived in every instance.

Dr. Lardy, in the Greco-Turkish war, in commenting upon the conditions found in 95 infected gunshot wounds out of a total of 469 cases, gives the following:

Pieces of cloth in wound carried by the ball	13
Hematomata	3
Fragments of bone acting as secondary missiles	29
Lodged balls	22
Cause of suppuration undetermined	28
Total	95

In this estimate we must conclude that the percentage of cases showing hematomata is small in view of the twenty-nine cases which presented fragments of bone lodged as secondary missiles. Each one of these fragments was displaced by the force of impact, which of necessity possessed energy enough to rupture the tissue about it, and there was doubtless a corresponding degree of hematomata.

That suppuration should have been so seldom attributed to the lodgment of either the ball or the pieces of clothing seems to accord with the observations of Strick, who experimented with a known spore mass of tetanus with which he contaminated his bullets before firing into rabbits. The animals died of tetanus in every instance. In order to estimate the influence of implantation of foreign bodies in wounds devoid of the lesions which come with the mechanical effects of a missile while traversing tissues, he experimented with four different kinds of foreign bodies; namely, bullets, splinters, cloth and paper. Out of seven rabbits in which the ball was infected with a tetanus culture and implanted in a simple incision in the muscles of the thigh five recovered and two died. Six rabbits inoculated with splinters similarly treated and planted in clean cuts all got well. When placed on cloth and buried in clean incised wounds, the tetanus killed two rabbits out of six; and but one rabbit out of six died when the culture was placed on filter paper which was buried in a clean wound. These results, compared to those of Strick, in which every animal died when shot with infected balls, show that the lodgment of foreign bodies *per se* adds but little to the susceptibility to infection, and that the special lesions from a ball animated by a certain degree of velocity as it passes through tissues are necessary to augment the susceptibility to infection. As already stated, these lesions partake of the nature of hematomata.

The influence of velocity in creating hematomata in soft tissues was the subject of certain experiments that prove of value. We fastened a rusty nail of thirty-two calibers to the end of a board, and, using the board as we would the handle of a hammer, a perforated wound was inflicted in the thigh of a cat by delivering a sharp blow. In the other thigh we fired a thirty-two caliber bullet at a distance of one foot. After death a block from each wounded area showed no gross appearances of hematomata about the perforation caused by the nail, while hematomata extended in the interstices of the muscle fibers for a distance of 5 mm. about the bullet wound in the opposite thigh. The influence of velocity was again shown by firing into cats with the Krag-Jorgensen service rifle. We give below the measured distance of the hematomata as observed away from the channel made by the bullet:

Krag-Jorgensen bullet, cal. 30, v. 835 f. s., hematoma, 8 mm.
Krag-Jorgensen bullet, cal. 30, v. 1138 f. s., hematoma, 12 mm.
Krag-Jorgensen bullet, cal. 30, v. 2200 f. s., hematoma, 23 mm.

The areas, as influenced by this bullet in the order given, would, therefore, be as follows:

Velocity 835 f. s. . . . . 201 sq. mm.
Velocity 1138 f. s. . . . . 453 „
Velocity 2200 f. s. . . . . 1664 „

See Fig. 1 and 2. The extent of hematoma is marked by the darker areas.

It is thus seen that the extent of the hematoma increases with the velocity of the projectile to a marked degree. The fact that destructive effects in the hard bones increased with velocity from the dispersion of the energy of the projectile was always appreciated, and the same factor doubtless accounts for the extent of the lesion in the soft parts.

Again, we know, as far as bone tissue is concerned, that the destructive effects increase with the sectional area of the bullet. That the same is true of the soft parts is shown below. The experiments were conducted by firing into the

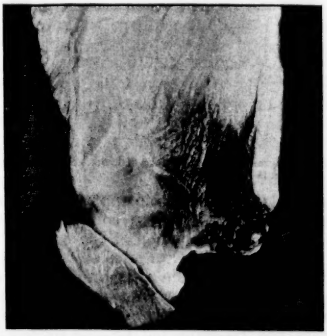


FIG. 1. — Krag-Jorgensen bullet, cal. 30, vel. 835 f. s.



FIG. 2. — Krag-Jorgensen bullet, cal. 30, vel. 2,200 f. s.

gluteal region of cats with the Springfield and Krag-Jorgensen rifles, the velocity of the bullets remaining approximately the same. The measured distance of the hematomata from the channel of the bullet is:

Springfield rifle ball, cal. 45, v. 1301 f. s., hematomata, 30 mm.
Krag-Jorgensen rifle ball, cal. 30, v. 1138 f. s., hematomata, 12 mm

The thoroughness with which tissues are often infected by the energy of an unclean bullet has a great bearing upon the susceptibility to infection. This is well shown by firing bullets of varying velocities and calibers into animals in which the skin has been well rubbed with finely-powdered charcoal. The numbers in millimeters

represent the distance the charcoal particles were found in the tissues away from the channel caused by the bullet:

Pistol ball . . . . . cal. 32, v. 300 f. s., 3 mm.
Krag-Jorgensen bullet. . . . . cal. 30, v. 2200 f. s., 10 mm.

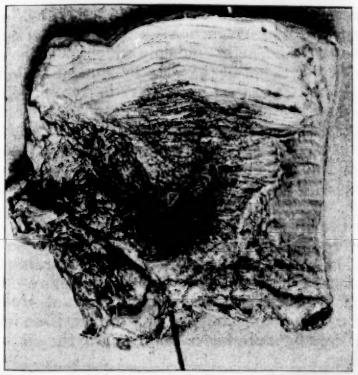


Fig. 3. — Springfield rifle bullet, cal. 45, vel. 1,301 f. s.



Fig. 4. — Krag-Jorgensen bullet, cal. 30, vel. 1,138 f. s.

If we compare the distribution of carbon particles as influenced by the sectional area of bullets, the velocity being about the same, we find the following:

Krag-Jorgensen bullet. . . . . cal. 30, v. 1138, 6 mm.
Springfield bullet . . . . . cal. 45, v. 1301, 17 mm.

This result corresponds closely with that obtained by Koller and Karlinski, who found that foreign bodies (such as carbon or particles of cloth) were driven at a distance of ½ to 2 cm. from the channel track while experimenting with the Swiss model reduced caliber rifle.

Among the lesions of gunshot wounds which predispose to infection another important factor (aside from the hematoma) is the fissuring, extending laterally from the channel track, and the disturbance of the muscle or tissue fibers, which is apt ultimately to lead to necrosis of the same. Microscopic sections show the muscle fibers torn, twisted, and otherwise distorted at a distance of 3 mm. to 10 mm. from the channel, varying with the velocity and sectional area of the projectile (see Fig. 5).

The foregoing has a very important bearing upon the rational treatment of gunshot wounds. In view of the extent to which extraneous matter



Fig. 5.

containing bacteria may be driven into tissues, it is hopeless to attempt to disinfect the channel made by a bullet. Extended experiments were conducted by Muller and Koller, in which they essayed various methods of treatment of the channel track in gunshot wounds caused by projectiles that were primarily infected, namely:

(1) Controls, for which nothing was done.
(2) Those treated with a glass drain.
(3) Those treated with an iodoform gauze drain.
(4) Those irrigated with a 5% solution of carbolic acid.
(5) Those treated by rubbing with a cotton mop soaked in tincture of iodine.
(6) Those treated by cauterizing the wound.

However treated, all the wounds were dressed with a clean sterile dressing.

The results showed that the animals treated by a simple dressing did best of all, and that all those treated by radical measures, such as swabbing with iodine and the application of the thermocautery, gave evidence of suppuration in every instance.

THE PLAGUE OF ATHENS.

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

If one consults mythology the origin of the first great epidemics, so called, will there be found, but leaving aside the myths, it may be said that it is more than probable that the pathology of the

human species is quite as old as its physiology; in other words, that as soon as man existed on this earth disease made its appearance likewise. From this I would not be understood as inferring that the number of diseases originally attacking man was as large as at the present time, but there is no doubt that many of them appeared at about the same time that the human race developed.

Leaving aside the ordinary infectious diseases, such as pneumonia or rheumatism, which certainly must have afflicted the earlier human races, I would say that among the contagious epidemic affections, such as syphilis, the eruptive fevers, typhoid fever, typhus fever, cholera, yellow fever, etc., all these maladies entered upon the pathological scene at different epochs.

Under the very general term of "plague" (λοιμὸς) the ancients included a number of diseases, whether contagious or not, which had as a common character to extend in the form of epidemics. It is not always an easy matter to determine exactly the nature of the various maladies included in this denomination, because the facts which have been handed down to us by the ancient writers regarding many of them are so insufficient that one could hardly guess the true nature of these diseases; but for all that there are a certain number of others of which we have more precise details, and thus it is quite possible to make a distinction between them and to a certain extent suspect their nosological signification.

The most remote mention that has been handed down to us regarding the plague is that of Moses, who says: "Fiat pulvis super omnem terram Egypti; et erunt super homines et quadrupade, ulcera, vesicæ effervescentes. . . . Et facta sunt ulcera, vesicæ effervescentes. . . . Et in hominibus et in quadrupedis facta sunt ulcera in veneficis (magiciens) et in omni terra Egypti." The ulcers and tumors which develop on both men and animals form the entire disease, and it is quite difficult with these two signs alone to pass an opinion on the exact nature of the form of plague described by this wise man, even although one may take into consideration everything that he has written.

The extraordinary phenomena which were said to precede the appearance of the disease throw no light on the question, but many have been the conjectures made regarding it. Certain writers have considered the affection as an epidemic of smallpox, while others are of the opinion that it was nothing more or less than the true bubonic plague, whose antiquity is thus made to extend back to the year 2443 of the Christian era. Daremberg thinks that the pathologic character as given by Moses, consisting in the presence of small pustules preceded by blisters, is in some respects similar to the disease described by Thucydides. The loimographs also refer to a plague which shortly after the one referred to by Moses arose in Egypt and ravaged Greece. The same origin is also attributed to another epidemic plague which also ravaged Greece, but all the data regarding these are so vague that no positive conclusion can be drawn.

We are not any better acquainted with the nature of the plague which attacked Troy during the reign of Priam in the year 1285 B.C., and which caused so much ravage in the Greek army. The description given by Homer is far too incomplete to enable one to say whether the disease was the true bubonic plague or typhus fever. Ovid also speaks in the seventh book of his "Metamorphoses" of a fearful epidemic which took place in the city of Egina in the year 2500 under the reign of Eacus. The poet even gives numerous details relating to the causes which prepared for the appearance of the scourge, and he gives some of the principal symptoms of the affection; but it should not be lost sight of that Ovid was a contemporary of Augustus and still more he was a poet, which should greatly decrease the value of his descriptions.

Herodotus, who lived in the fifth century before our era, has given more exact details regarding the epidemics, and while Sophocles and many other authors have considered all epidemics as due to the wrath of the Gods, as did Homer, Herodotus occasionally searches a solution in the natural causes.

After the battle of Salamimus, when Xerxes left Mardonius in Thessaly and directed his troops toward the Hellespont, the army who followed him gathered the wheat on its route, and when this was wanting ate the herbs, leaves and bark of trees, so great was the necessity for food. The plague (λοιμὸς) and dysentery (δυσεντερίη) was the result of this extreme misery, and killed large numbers of men. The Greek historian also says in another passage of his works that the inhabitants of Chios, having sent a choir of one hundred young boys to Delphes, where the plague was probably reigning, ninety-eight of them were killed off by the disease.

Dionysii Halicarnassensis in the first volume of his "Opera omnia" speaks of an epidemic which occurred during the third year of the LXIX Olympiade, and which, after having devastated the country surrounding Rome, invaded the city itself with great violence. It is said by this author that the mortality reached such proportions that in order to get rid of the corpses of the slaves they were thrown in masses into the Tiber. It is unfortunate, however, that this historian has given us no account of the symptoms of the disease, so that its nature is quite lost to us. Such, briefly, are the great epidemics which were observed before the plague of Athens appeared, and although they are of not much interest, on account of the few facts we have regarding them, they have nevertheless been mentioned here as a sort of introduction to what is about to follow, and it may be said that the plague of Athens is the commencement of the medical history of the great epidemics.

The plague which appeared in Athens in the LXXXVIII Olympiade, or, in other words, 429 years B.C., is the first great epidemic mentioned by Fodéré, but there is no doubt that other epidemics had been observed before this time, because a well-known writer, by name Papon, mentions in the first volume of his work entitled "De

la Peste," which was published about a century ago, twenty-two epidemics of the plague, which had preceded that which attacked Athens. But nevertheless it may be said that the first epidemic of which we really have any precise documents is that which appeared in the capital of Greece.

In his memorable history of the Peloponnesian war, Thucydides has transmitted to us a very complete description of the scourge which attacked Athens, and although one might say that the subject is only spoken of incidentally, it is nevertheless true that this historian relates the epidemic as a great occurrence coinciding with the epoch of the war whose history he relates. Although Thucydides was not a physician, he has not omitted a single detail in the account of the symptoms presented by this great epidemic, and he is all the more authorized to describe the disease because he was himself afflicted by it.

A circumstance which is hard to explain is the absolute silence regarding this disease on the part of the physicians living at the time, and Hippocrates, who was living at the time of the epidemic, has written nothing regarding it, or rather what is more probable, is that that part of his works where he treats of this plague has not been handed down to us. It would seem inadmissible that the father of medicine who wrote on every subject relating to the healing art should have remained dumb regarding this great pathologic tragedy. The silence of Hippocrates regarding this epidemic might also be explained from the fact that he was not an eyewitness of it, and it seems fairly well established at the present time that the great physician of Cos was not at Athens at the time the scourge made its appearance.

Thucydides tells us that the disease broke out during the second year of the Peloponnesian war, at the time when the inhabitants invaded Attica for the second time, and it confined its ravages principally to Athens, although other cities were not completely free from its attack. The disease continued for three years with alternatives of remission and recrudescence, killing off the army and the civil population. When this plague fell upon Athens it was said that it had already broken out in several other districts in the direction of Lemnos and in other places. The death-rate, which in the beginning was terrific, caused the greatest consternation among the inhabitants, and nothing so terrible could be recalled in the memory of man. The disconcerted physicians, on account of the novelty of the disease with which they had to deal, were utterly incapable of combating it, and many of them died victims of their duty.

The origin of this disease is quite obscure and nothing very precise is known regarding it, and I here give the literal translation of a passage from Thucydides which shows that he was badly informed regarding this point: "*It is said* that the scourge commenced in Ethiopia above Egypt and that it then descended into Egypt as well as into Libya and into a large portion of the possessions of the king of Persia." It nevertheless remains a fact that in the city of Athens the disease appeared suddenly. The inhabitants of Piræus were the first attacked, and they affirmed that the Peloponnesians had thrown poison into their wells. Here is textually the description of the symptoms as handed down to us by Thucydides according to the French translation by Charles Zévort of Bordeaux: "Generally speaking one was suddenly seized amidst the most flourishing health, without any apparent cause. In the beginning a violent heat in the head was experienced; the eyes were red and inflamed. The inside of the mouth and tongue were not long in becoming injected by blood; the respiration was irregular, the breath fetid. Then sneezing and hoarseness occurred; in a short time the disease extended to the chest, giving rise to violent spells of coughing; when it became situated in the stomach it caused, in the midst of painful efforts, the evacuation of bile, to which physicians have given different names. The greater number of patients were attacked by hiccough without vomiting, accompanied by violent spasms, which sometimes stopped with the hiccough, at others being prolonged much after.

"Externally the body did not appear very warm to the touch, nor livid; it was reddish, covered with spots and small pustules and ulcers. The interior was so burning that the patients could not endure either the slightest bit of clothing or the very finest linen covers; their only desire was to be naked, and above all wished to throw themselves into cold water. One could see many of those who were abandoned to themselves jump into the wells, tormented as they were by an inextinguishable thirst. It made little difference whether they drank little or much, the result was the same. The patient was the prey of a continual agitation and insomnia.

"As long as the disease was at its height the body did not become thin, and this was a most astonishing fact that it could resist the suffering to such a point; but the greater number of patients who still preserved some strength did not die until the seventh or the ninth day, devoured as they were by the internal fire. If they escaped at this term, the disease descended into the abdomen and there produced a violent ulceration, accompanied by a continuous diarrhea, from the result of which many died from exhaustion later on; because the disease, after having commenced in the upper part of the body and establishing its seat in the head, from here extended to the entire body. If any one was to escape from the more serious accidents it was indicated by the fact that the disease attacked the limbs. It then made eruption on the natural parts, on the ends of the hands and feet, and several patients only escaped from death by the loss of these members. Some also lost their eyes; others during the early part of their convalescence were found to have forgotten everything, and neither recognized themselves nor their friends.

"There is no expression which can give an idea of this disease; its violence, in every instance, was far above all that human nature could stand; but what distinguishes it especially from other dis-

eases which occur to mankind is that the birds and quadrupeds who live upon the flesh of corpses did not come near the dead, although there were a great many without graves, and if they did partake they died as soon as they had eaten. What proves it is that the birds of this kind completely disappeared, and none were seen around the corpses or elsewhere. The dogs, who on account of their familiarity with man, rendered this phenomenon still more marked.

"Such was, in general, and without speaking of a large number of accidents and symptoms peculiar to different patients, the character of the disease. None of the usual diseases were present at this time; if one did occur it terminated in the reigning disease. Some died neglected, while others died after tender care. There was, so to speak, no efficacious remedy, because what did well in one case did badly in another. There was no human being whose vigor or weakness placed him out of reach of the scourge; it carried everything before it, no matter what care or diet the patients followed. The most frightful thing of all was the discouragement of those who were afflicted by it, and believing at once that there was no hope they gave themselves up, and did not resist the disease; what was no less sad was to see, as among the herds, the contagion and death extend by the help that the afflicted gave each other, and this was the cause of the great mortality.

"No one felt more deeply for the dying and the sick than those who had recovered from the scourge; they knew the sufferings and personally were forever without fear, because the disease never proved fatal if contracted the second time.

"What contributed above all to increase the ills of the time was the arrival of people from the country into the city. The latter had much to suffer because they were without homes and without shelter; exposed to an extreme heat, and massed together in badly ventilated huts they died by the score. As there was no order reigning in the city the cadavers remained piled in heaps. These unfortunate patients could be seen rolling in the streets, huddled around the fountains, half dead and devoured by thirst. Even the temples were full of cadavers of those who had sought shelter and died. The excess of the disease was such that not knowing what to do the unfortunates lost all respect for divine and human things. The laws followed up to that time regarding funerals were forgotten, and each one buried his dead as well as he could.

"In other respects this disease inaugurated other troubles in Athens. The vices that were formerly only sought for secretly were indulged in now without concealment. . . . They desired to enjoy as much as possible without delay, and only thought of momentary pleasures . . . ; neither the fear of the Gods nor any human law could stop them; because as every one was dying they considered righteousness and unrighteousness indifferently; for that matter the afflicted did not expect to live long enough to reach the day of judgment and punition. . . ."

Such is the striking description that the illustrious Athenian general has left, and which quite properly follows in his work the beautiful words that he attributes to Pericles, pronounced on the tomb of the soldiers who died during the first year of the Peloponnesian war. This picture given us of the epidemic leaves nothing to be desired, and all symptoms of the affliction are carefully given as well as all the data regarding the duration, prognosis and hygienic condition of the population, so that it can be said without any exaggeration that this writing is one of the most beautiful pages of antique medicine.

The plague did not limit itself to Athens, and, in truth, the disease starting in the Orient undertook a long voyage, during which the capital of Attica was only a stopping-place.

Thucydides also tells us that the plague occurred at the same time among the Athenians who were besieging Potidæa, and he says: "The same summer Agnon, son of Nicias, and Cleopompos, son of Clinias, colleagues of Pericles, took the army that he had commanded and immediately marched against the Chalcidians of Thrace and against Potidæa, the siege of which continued. . . . But the plague having declared itself made such terrible ravages among the Athenians that it ruined their army; even the troops which had arrived before them, and who had not been attacked, took the contagious disease by contact with Agnon's soldiers. . . . Agnon re-embarked and brought his troops back to Athens; out of four thousand men he lost one thousand and fifty within the space of forty days."

As has already been said, this epidemic remained at Athens for three years, and various writers have endeavored to ascertain approximately the number of victims that it made. Thucydides only gives the number of deaths occurring in the army, which amounted to four thousand seven hundred souls. Now, according to Littré, the military population of Athens would hardly amount to twenty thousand men, while the total population of the city, including the slaves, is placed at about four hundred thousand, so that if the plague attacked the civil population with the same severity that it did the soldiers, more than eighty thousand deaths must have occurred. It is quite probable that the poorer classes, as always happens under such circumstances, were more cruelly attacked than the aristocracy, although the rich paid their tribute as well. The great Pericles was a victim of this epidemic, and Plutarch tells us how this great man died after seeing his relations and friends swept away around him. The disease with him took on a chronic form, and he finally died exhausted. In Plutarch's "Vitæ parallelæ," Vol. I, will be found the following passage, which would lead one to suppose that the disease had acted on the mental condition of this great man: "Per id tempus videtur corripuisse pestis Periclem non perindeut cæteros, acris et acuta, sed quae lento morbo diuturnoque, et sæpius alternante corpus ejus sensim conficeret et vim obtunderet mentis."

In "Æliani," Varia hist., lib. XIII, cap. XXVII,

it is stated that the celebrated contemporary of the plague, Socrates, remained in Athens during all this sad time, but on account of his severe manner of living remained free from the affliction.

From all that has been said, it is evident that the plague of Athens was a contagious epidemic disease, and the question now arises as to its real nature and its causes. Thucydides gives no opinion regarding the latter point, and only gives us the facts as he saw them pass under his eyes. This silence as to the cause of the plague of Athens on his part certainly goes to show the great mind that he possessed. The opinion of Democrites, who was a contemporary of the great Grecian historian and of Hippocrates as well, and who was considered the greatest of Greek minds before the advent of Aristotle, found expressed in a work which he composed, according to the authority of Cœlius Aurelianus, on plagues and pestilential diseases, — which unfortunately has never come down to us, — attributes the great epidemics to the destruction of the celestial bodies and the fall of the atoms composing them, the latter being the enemies of human nature. If this singular theory of the philosopher of Abdera is mentioned here, it is simply to show how extensive were the researches of the philosophers of antiquity, although it has no other merit than its great originality. These men not only studied the organization of bodies, but also the origin of diseases, and it may be said that it is from their schools as well as from the colleges of the physician priests who attended to the temples of Esculapius, and were designated by the name of the Asclepiades, that all the medical doctrines originated which Hippocrates collected and handed down to us. According to Diodotus of Sicily extremely abundant rains occurred in Greece in the winter which preceded the advent of the plague and so impregnated the soil that large pools of stagnant water resulted. The excessive heat which followed in the summer caused a putrid fermentation to arise in these marshes, which infected the atmosphere and produced the plague. On the other hand, Plutarch thought that the scourge was brought about by the great number of people collected together in close quarters, for it must not be forgotten that the population of the country surrounding Athens came into the city for protection.

Such are the various opinions of the ancients regarding the cause of this great disaster. The people naturally attributed the disease to the anger of the Gods, and this was still more confirmed in their minds from the fact that no remedy could be found which had any action on the disease. For this reason they resorted to supplications and prayers in honor of Apollo. The opinion of Lucretius regarding the Athenian pest is worth while mentioning, and runs somewhat as follows: "Are not the germs of our diseases transmitted to us from far-off places? Suckled in the bowels of the earth, in the aërian fields, the multitude of contagious ills rise, travel both the heavens and the earth and formed in an instant, these tempests grumble, strike and suddenly disperse." In this passage the poet only develops the ideas of Epicurus on the causes of epidemics, for this philosopher attributed all of them to the presence of miasma in the atmosphere, and thus he explained the propagation of the disease to a large number of human beings.

In modern times many have been the opinions regarding the nature of the pest of Athens. Dalmas, in the Dictionnaire de Médecine in thirty volumes, says in his article on typhus that the plague of Athens was nothing else than this disease, while Mertens, who wrote the history of the plague of Moscow in 1770, believed that there was a difference between the two epidemics. Rosenbaum attributed the mortification of the genital organs to syphilis, while Krause, basing himself entirely on the generalized eruption of pustules which occurred to those afflicted with the plague at Athens, believed that it was nothing more or less than smallpox. Why Webster and Smith should have emitted the idea that the pest of Athens was yellow fever is hard to understand. Schoenke and Osann make no distinction between the true bubonic plague and that which occurred at Athens, while Hoeser considers that the latter was nothing but the plague which had not arrived at its complete development, although later on the professor of Breslau changed his opinion on this point. Hecker found, after careful research, that the plague at Athens could not be compared with any affection known at the present day, and believes that it was a disease which is now extinct. This was also the opinion of Brandeis.

In a very interesting article which appeared in the *Revue des Deux-Mondes* in 1836 from the pen of Littré, entitled "Des Grandes Epidemies," the learned author expresses himself as follows: "Quand on examine attentivement les détails et l'ensemble de cette peste il est impossible de retrouver aucune des maladies qui nous affligent maintenant. La peste d'Athenes est une des affections aujourd'hui éteintes."

Daremberg, who was so great an authority in researches pertaining to the history of medicine, considered the plague of Athens as a particular disease which has no analogy to any one reigning at the present day.

As will be seen, there exists a considerable divergence of opinion regarding the nature of the plague of Athens. This cannot be due to any want of description, because the illustrious Grecian historian is far from being obscure and has certainly well described the symptomatology of the affection. In order to come to any definite conclusion, each one of the opinions emitted should be separately considered, and it may be said at once that among the diseases observed at the present time those to which the plague of Athens has been compared are typhus, bubonic plague and smallpox. The question of scarlet fever, syphilis, yellow fever or measles should not be discussed, because the scourge of the capital of Greece had nothing in its nature which could in the least be compared with any of these. But the bubonic plague, typhus and perhaps more especially smallpox do present similar characters, and it is only

these three epidemic diseases that we shall take into consideration.

It is a fact that the plague of Athens presented certain characters which simulate typhus. In both diseases we find great prostration, violent congestion of both the respiratory and digestive systems, vomiting of bilious matter and partial gangrene of certain members. The special type of eruption which appeared on the integuments in the form of ulcerated pustules, gangrene of the eyes and genital organs, as well as a certain number of other symptoms, distinctly separates the plague of Athens from typhus.

Thucydides states very explicitly that the body was covered with small blisters and ulcerations. Now, the word "blister" implies a small vesicular ampoula, which is simply composed of a quantity of serum underneath the epidermis, and which forces it up into an elevation, and the consecutive ulceration of these vesicles is easily explained. Now, in typhus, no such cutaneous lesion is to be found. In this disease the integuments are covered by pale or bright red spots which do not proeminate above the cutaneous surface and in size never measure more than 3 to 4 mm. These spots are usually present in such numbers that when one looks at a patient afflicted with this disease at some little distance off, the skin simply looks a little redder than usual, but is uniformly tinted. In typhus an inflammatory process is frequently present in the region of the parotid gland, but this appears to have been completely absent in the disastrous epidemic of the Grecian capital.

These signs seem to be quite sufficient to warrant us in making a distinction between the two diseases, and an error could have only been committed by those who examined the question superficially. Typhus is a disease which develops in places where a large number of men are collected, such as in camps, hospitals, ships and prisons, where it seems only to develop spontaneously when a subject already ill with it has been brought among the others, and then it is contracted by mediate or immediate contagion. Now, all these conditions were present at Athens during the first years of the Peloponnesian war, so that it is not to be wondered at that some medical historians considered this epidemic as typhus, but if one recalls that this plague came from the upper Orient, and that before it reached Athens it had ravaged Egypt and the greater part of the Persian Empire, typhus must be excluded necessarily when it is recalled that the plague of Athens was not localized to this city alone but had raged over large countries.

It does not seem possible that the plague of Athens can be considered as bubonic plague. Evagoras, in his "Historiæ ecclesias ticæ," lib. IV, cap. XXVIII, De pestilente morbo, relates how he was eye-witness of several invasions of the bubonic plague at Antioch, and he has not failed in the description that he has left us of establishing a parallel between the plague occurring in his time and that described by Thucydides. His conclusion was extremely explicit, and is as follows: "This disease has certain characters similar to those described by Thucydides, but it differs from it in many respects." Ranchin of Montpellier observed an epidemic of plague which ravaged his city in 1629 and 1630, and after having reproduced literally the description given by Thucydides, he goes on to say: "Voilà une déscription de la peste bien extravagante, et qui ne s'accorde pas avec les signes de la nostre." Fodéré is less affirmative when he says: "La peste d'Athenes décrite par Thucydide, ainsi que celle qui devasta l'Europe et l'Asie sous Marc-Aurele *ou l'on n'observe ni bubons ni charbons*, mais bien la gangrene des extremités . . . pourraient bien n'avoir pas été la veritable peste."

Pariset distinctly says in his "*Mémoire sur les causes de la peste et les moyens de la déstruire*," which was published in Paris in 1837, that the plague of Athens was not the true bubonic plague, and to try to assimilate one with the other would be to fall into a great error, and Littré in his translation of the works of Hippocrates categorically declares that the disease which afflicted Athens was entirely different from the true bubonic plague. Anglada is no less explicit when he states in his "*Etude sur les maladies éteintes et les maladies nouvelles*," published in 1867, that the epidemic which afflicted Athens was not the bubonic plague, for the peremptory reason that bubos were wanting in the symptomatology. Daremberg also distinctly separates the two diseases.

Now, in point of fact, the true bubonic plague is ushered in by fearful hallucinations or by the sudden appearance of a slight fever. Procope, who was an eye-witness of the first invasion at Constantinople of the Oriental plague occurring during the reign of Justinian, says in his well-known description, which will be found in his "Historiarum sui temporis," lib. VIII, vol. I, cap. XXIII, that the bodies of those afflicted did not change in color and that their temperature was not that of fever. No indication of inflammation was noted.

The beginning is entirely different in the case of the plague of Athens, as has already been pointed out: hallucinations were wanting, and the eyes, tongue and pharynx were highly hyperemic. The patients sneezed, and were attacked by violent fits of coughing; their voice was hoarse, while the skin was either red or livid. Thucydides also mentions free vomiting of bile and a general eruption of small pustules followed by ulceration. In the bubonic plague, as described by Procope, there was no vomiting, but the body was covered with black spots, accompanied by bubos in the inguinal and axillary regions. In the plague of Athens gangrene of the genital organs, the limbs and eyes occurred; there was an incessant agitation and a persistent insomnia, while in the plague which afflicted Constantinople we find large plaques of gangrene of the skin, marked depression or a furious delirium. In the former disease death occurred either on the seventh or the ninth day, while in the latter it occurred very suddenly in the beginning of the disease, or during the second or third day.

From all that has been said, it would appear conclusive that the plague of Athens was not the true bubonic plague, and it simply remains for us now to examine whether or not it was the smallpox which afflicted the capital of Greece.

In both smallpox and the epidemic which afflicted Athens we find a generalized eruption followed by ulceration, hyperemia of the eyes, tongue and pharynx, while the general symptoms are more marked in the respiratory and digestive systems. It is well known that in smallpox the eruption may interest the conjunctiva and the cornea, and may thus give rise to more or less severe ophthalmia, which from the destruction resulting may cause complete cecity. This fortunately rarely occurs in smallpox.

On the other hand, death is not the same in the two diseases which we are considering. This occurred on the seventh or the ninth day in the plague of Athens, while in confluent smallpox the patient rarely dies before the eleventh day, and, generally speaking, it may be said that from the twelfth to the fourteenth day is the usual time of the fatal ending, should it occur in this disease. Occasionally the patient is carried away during the first five or six days of smallpox, but this apparently only occurs when the disease presents an exceptional malignancy or when it assumes an abnormal type.

To still further show the differentiation between the two diseases, we would here append the following conclusions taken from the dissertation of Krauss, which was published in 1831, and had for title "*Disquisitio historico-medica de natura morbi Atheniensium a Thucydide descripti*," an analysis of which has been given by Littré in the second book of the epidemics of the French translation of Hippocrates:

"(1) True smallpox does not transform into ulcers, the pustules remain full of puriform lymph until desiccation occurs. (2) Thucydides does not intimate that the eruption had a critical character; now, in all epidemics, in the greater part of patients afflicted by smallpox, the eruption has this character. (3) Several symptoms which, according to Thucydides, occurred to some patients, for example, gangrene of the feet, the hands or the genital organs, have not been mentioned by any author who has described epidemics of smallpox. (4) In the long interval of time occurring from Thucydides to the sixteenth century of the Christian era, when smallpox is expressly named, one finds, it is true, various eruptions mentioned that some writers have called traces of smallpox; but one does not find a description of smallpox, and from this fact it may be argued that the latter disease did not exist in antiquity. Now in point of fact, since its first appearance in the sixteenth century of the Christian era, it has always preserved the character by which we know it at the present time, and it constitutes a disease of a perfectly constant type. Now, who would dare to reproach the ancient writers to have not taken into account this type which is so distinctly characteristic. (5) The cicatrices which smallpox leaves on the skin have never been mentioned by any of the ancient writers, and this seems to be an argument of the greatest force."

From all these considerations I believe that we may conclude that the plague of Athens cannot be compared with any of the diseases known at the present time, and, consequently, it should be considered as a special epidemic disease which is now extinct. Without emitting any hypothesis as to the real nature of this scourge, which would be time lost, it is quite admissible to believe with Littré, Hecker, Daremberg and others that it should occupy a special place in the great class of exanthematic fevers.

THE CONDITION OF THE VASOMOTOR NEURONS IN "SHOCK."[1]

BY W. T. PORTER, M.D., AND W. C. QUINBY, M.D.[2]

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INJURIES to peripheral tissues may at times be followed by a condition termed "shock," characterized by a great fall in blood pressure, sinking of the body temperature, weak and often irregular heart beats and lessening of the normal irritability of the nervous system. Such symptoms may also be called forth by the direct mechanical injury of the nerve cells which maintain these several functions, but this should be distinguished from shock. In shock the primary injury lies outside these nerve cells.

The symptoms which characterize shock have often been ascribed to a depression of the vasoconstrictor nervous system. Each of the nerve chains which constitute the vasoconstrictor nervous system has three neurons. The cell body of the first lies in the bulb; its axis cylinder process ends in the spinal cord or in the bulb itself, in physiological contact with the second neuron. The cell body of the second neuron lies in the cord or bulb, but its axis cylinder process leaves the cord and ends in physiological contact with a sympathetic cell. The sympathetic cell is the third neuron. Its axis cylinder process ends in the wall of a blood vessel.

The bulbar cells, or first neurons, affect the blood vessels only through the second and third neurons. Consequently, if stimuli which pass through afferent nerves to the bulbar cells call forth a normal change in the caliber of the blood vessels, the condition of all three neurons must be normal.

The most conspicuous afferent path to the vasoconstrictor center is furnished by the depressor nerve. It has been shown by Porter and Beyer[3] that the depressor nerve connects with all the bulbar vasoconstrictor cells alike. The fall in blood pressure occasioned by the stimulation of the central end of the depressor nerve is therefore a quantitative test of the condition of all the vasoconstrictor neurons,

[1] Presented before the Boston Society of Medical Sciences, Oct. 20, 1903.

[2] Dr. Quinby took part in this research at the instance of the Surgical Department of the Harvard Medical School.

[3] W. T. Porter and H. G. Beyer: Amer. Journ. of Physiol., 1900, iv, pp. 283-299.

those of the first order, in the bulb, and those of the second and third order through which alone the bulbar neurons can alter the constriction of the blood vessels. If, therefore, the stimulation of the central end of the depressor nerve produces as great a fall in blood pressure during shock as before shock began, the condition of the three vasoconstrictor neurons must be normal even in shock.

Upon this conclusive reasoning rests the method pursued in this investigation. The normal fall of blood pressure produced by stimuli of uniform intensity applied to the central end of the depressor nerve was measured in the rabbit and the cat. In the same animals shock was then brought on and the measurements repeated. Following is an abbreviated but typical protocol:

EXPERIMENT XI, SEPTEMBER 24, 1903.

9 A.M. Rabbit anesthetized with ether.

9.15. Carotid blood pressure 67 mm. Hg. Rectal temperature, 38° C. On stimulation of the depressor nerve the blood pressure fell to 36 mm., a fall of 46%.

9.20 to 9.30. Applied nitric acid to exposed intestines. The blood pressure at first rose slightly and then sank slowly; the rectal temperature also sank steadily. Shock soon progressed so far that the anesthetic was no longer necessary. The gradual sinking of the blood pressure to a point almost 50% below the normal and the effect of stimulation of the depressor are shown in tabular form. At 3.25 P.M. the rectal temperature was 26° C.

Hour.	Blood Pressure, Mm. Hg.	Fall on Stimulation of Depressor, Mm. Hg.	Percent of Fall.
3.25 P.M.	53	30	43
3.30	53	30	43
4.50	40	22	45
5.16	35	23	34

At 5.16 P.M., eight hours sixteen minutes after the beginning of the experiment, the rectal temperature was 25° C.

In other experiments the blood pressure, which had fallen in shock, was temporarily raised to normal by the injection of saline solution in the jugular vein, and the depressor *immediately* stimulated. In such cases the blood pressure fell as many millimeters as it had on stimulation before shock set in.

Exhaustion in the vasoconstrictor neurons cannot therefore be the essential cause of the symptoms termed "shock."

A HITHERTO UNDESCRIBED MEMBRANE OF THE EYE AND ITS SIGNIFICANCE.[1]

BY FREDERICK HERMAN VERHOEFF, A.M., M.D., BOSTON,

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WHILE studying the external limiting membrane of the retina in a section of a normal eye, the writer was surprised to find it continue on at the margin of the disc and pass into the layer of pigment epithelium, where it could be followed until the gradually increasing pigmentation hid it from view. Other sections of the same eye, bleached by the method of Alfieri and stained in a variety of ways, showed the still more surprising fact that this membrane was present in the pigment layer throughout the fundus. Mallory's phosphotungstic acid hematoxylin seems to be the best stain for the membrane, because in specimens fixed in formaldehyde and in bleached specimens fixed in Zenker's fluid it does not stain the cells to any extent, and the membrane is brought out in sharp contrast.

The appearance presented by this membrane in cross section is that of a delicate line running along near the inner margins of the cells, the latter projecting beyond it in the form of processes of variable length. Occurring at almost regular intervals on the line there are black dots, each of which on close examination is found to be situated at the line of junction of two cells. On careful focusing it can be seen that the line is not always on the same level, evidently passing sometimes behind and sometimes in front of the cells. Rarely it is missed entirely for a cell or two. In oblique sections the true structure of the membrane is at once apparent, the latter appearing then not in the form of a straight line, but as a series of hexagonal loops which are fused together at their sides of contact so as to form a screen into the openings of which the pigment cells project. The little dots resolve themselves into the sides of the loops, which in cross section had pointed more or less directly at the observer.

That this is a true fenestrated membrane, and is not an appearance produced by the contours of the cells, there can be no doubt whatever. In the first place, as just stated, it does not correspond in position to the margins of the cells. Secondly, in phosphotungstic acid hematoxylin followed by acid fuchsin it stains blue, whereas the cells stain pink or not at all, and show no vertical lines between them. Thirdly, in certain places where two neighboring cells have shrunken apart, it remains intact. Fourthly, it can frequently be seen projecting beyond a fragmented portion of the pigment layer.

The membrane in the pigment layer is similar to the membrana limitans externa of the retina in structure and also in staining reactions, both membranes giving the staining reactions of neuroglia. The writer has a few specimens which seem to show a similar membrane in the ependymal epithelium of the brain and spinal cord. Possibly this has already been described by others.

For years the membrana limitans externa has been described as being formed either by the apposition of the outer ends of Müller's fibers, or by lateral interlacing offshoots from them. Greeff, in his elaborate article on the retina, still holds to this view. The basis for this belief seems to rest on the fact that Müller's fibers have been seen to end in contact with the membrana limi-

[1] This paper will appear in full with illustrations in the Reports of the Royal London Ophthalmic Hospital.

tans externa. Since, however, an entirely similar membrane, and one with which it is directly continuous, exists in the pigment layer, where there are no such fibers, the writer feels that this theory must be abandoned. The little processes that have been described as arising from the membrane and passing in between the rods and cones so as to isolate them are evidently nothing but the cut ends of loops seen obliquely. The appearance of other little processes extending inwards is due to the sharp contours of the cones.

No one can doubt that the membrane in the pigment layer is a product of the cells which project through it. It seems clear, therefore, that the membrana limitans externa must have a similar origin. The latter membrane, however, makes its appearance long before the rods and cones are formed, so that it must be manufactured by cells which later become converted into these elements. The natural deduction from these conclusions is that the rods and cones and the cells of the pigment layer are essentially of the same nature, and that the former are really only modified spongioblasts (of His). Two facts already mentioned support this deduction: one is that at the margin of the optic disc the rods and cones can sometimes be seen gradually to assume the character of the pigment cells, and the other is that the membrana limitans externa gives the characteristic staining reactions of neuroglia. The writer has found, too, that the rods and cones, and frequently also their nuclei and fibrils, can be differentiated from the bipolar cells of the retina by the neuroglia stain. The theory that the rods and cones represent modified ependymal cells is not new, but it seems to the writer that the foregoing considerations make this theory practically a certainty. It is interesting that this supports Barker's contention, based on analogy, that the rods and cones are not nervous elements but sensory epithelium and that the bipolar cells of the retina correspond to the cells of spinal ganglia.

As is well known, in the rosettes of glioma retinæ there is a membrane which on cross section appears to be identical with the membrana limitans externa of the retina. So far as the writer can ascertain, however, its appearance in plane section has never been described. To determine the structure of this membrane, a glioma retinæ was selected in which the rosettes were both unusually large and numerous. Sections from a portion of this tumor, fixed in Zenker's fluid, show conclusively that the membrane in the rosettes is a fenestrated structure similar in every way to the membrana limitans externa and to the membrane of the pigment layer. The same stains were applied as in the case of the other two membranes and with identical results. Rosettes are frequently to be seen in parts of which the membrane is cut transversely, while in other parts it is cut in plane section and can be seen to become continuous with a series of hexagonal loops. The fenestrated structure of the membrane seems to explain the formation of the rosettes, for it is evident that if a few cells became bound together by such a membrane, and they were otherwise unhampered in their growth, they would be compelled to form a more or less spherical body.

The similarity of the rosettes of glioma retinæ to the layer of rods and cones, the neuro-epithelium of the retina, was first pointed out by Flexner and a few years later by Wintersteiner. Each observer suggested the term "neuro-epithelioma" as the proper designation for these tumors. A strong argument against the theory of Flexner and Wintersteiner in regard to the nature of rosettes is the fact that according to accepted views the membrane of rosettes could not be formed in the same way as the membrana limitans externa, since there is nothing corresponding to Müller's fibers in these bodies. Strangely enough, this fact seems to have been entirely overlooked. The observations of the writer, however, render this objection no longer valid, for it has just been shown that the membrana limitans externa is in all probability produced by the cells which go to form the rods and cones. It was pointed out, too, that the two membranes are identical in structure.

While, then, the nature of the rosettes in glioma retinæ seems plain, the character of the other elements in these tumors is still undetermined. Thus far there is no trustworthy evidence that the cells are differentiated into true ganglion cells or neuroglia cells. Greeff claims that by means of the Golgi-Cajal method he has not only demonstrated several types of ganglion cells but neuroglia cells as well. If ganglion cells can be found in cheese by the Golgi method, it is not surprising that they should have been found in a tissue so prone to undergo degeneration as is glioma retinæ. Then, too, the ganglion cells and neuroglia cells belonging to a portion of retina incorporated in the tumor might easily be mistaken for elements of the tumor itself. By Mallory's method the writer has been unable to find neuroglia fibers in these tumors which were not connected with the retina. Brown Pusey has recently described a case that he evidently regarded as glioma retinæ, and has arrived at the conclusion that glioma retinæ consists essentially of neuroglia elements. He also concluded that the limiting membrane of rosettes corresponded to the internal, not to the external limiting membrane of the retina. Judging from the description of the case, however, the writer is very sure that it was really one of phthisis bulbi posterior following metastatic ophthalmitis, one of the conditions known clinically as pseudo-glioma. The "rosettes" were evidently nothing more than retinal folds.

In view of the fact that there is no reason to believe that these tumors contain neuroglia, it is obvious that the term "glioma retinæ" is an inappropriate one. It is all the more so because there are tumors of the brain termed "gliomata," which are believed to be made up of neuroglia, and it seems possible that such tumors may yet be encountered in the retina. The term "neuro-epithelioma," however, is no less inappropriate

than the other. If it indicated no more than that the tumor took its origin from the epiblast of the neural canal of the embryo, it would unquestionably be a most suitable term. Unfortunately, the term "neuro-epithelium" has been applied to the layer of rods and cones in the fully differentiated retina, and hence "neuro-epithelioma" indicates a tumor whose essential elements correspond to the rods and cones. But as a matter of fact it is rare for rosettes to form more than an insignificant part of the tumor, and in most of these tumors they are entirely absent. It is possible, if not probable, that they do not represent the only form of differentiation and that the essential elements of the tumor may undergo differentiation in other directions as well. The possibility remains that many of the elements represent neuroblasts. It is evident, therefore, that "neuro-epithelioma retinæ" is a no more suitable designation than "glioma retinæ" for the tumors to which they have been applied, and that at present there is no reason why the latter should be supplanted by a term over which it has long priority.

CONCLUSIONS.

In the pigment layer of the retina there is a fenestrated membrane, identical in structure and staining reactions with the membrana limitans externa.

The rods and cones are not nervous elements, but modified ependymal cells, and are analogous to sensory epithelium.

The limiting membrane of the rosettes of glioma retinæ is a fenestrated membrane similar in every way to the membrana limitans externa, and the rosettes correspond to the neuro-epithelium of the normal retina.

The structure of the limiting membrane of rosettes explains why they assume their characteristic spherical and spiral-like forms.

"Neuro-epithelioma retinæ" is no more suitable than "glioma retinæ" for the class of tumors to which these terms have been applied.

Clinical Department.

CLINICAL MEETING OF THE STAFF OF THE MASSACHUSETTS GENERAL HOSPITAL, APRIL 10, 1903.

(Concluded from No. 16, page 431.)

RÉSUMÉ OF DR. F. B. HARRINGTON'S SERVICE.

DR. E. A. CODMAN said: I want to present this leaflet as I did last year, not as a table of statistics, but to give you some idea of all the cases, good and bad alike, which come into one-ninth of the surgical service, with special reference to their results. Please bear in mind that most of the cases we have been able to trace are the least satisfactory ones, and that those that do not report are presumably better.

In using our judgment on a surgical question, we are mainly guided by our individual experience and by what we read of the work of others. Next to our individual experience in value comes the experience of our colleagues, the character of whose work we know. In the records of results found in surgical literature we are often ignorant of the degree of ability and standard of veracity of the author, so that the nearer home we get our facts, the more faithful prognosis can we give our patient.

The weakness of our hospital régime is in the failure to record ultimate results. This résumé which I have passed about is only of real value to one who has seen the individual cases, but if each of the nine staff surgeons presented annually such a report as this, the aggregate result would be worth reading.

A RÉSUME OF THE RESULTS OF DR. HARRINGTON'S SERVICE, FROM JUNE 1 TO OCTOBER 1, 1901, AS SEEN IN THE FOLLOWING JUNE OR LATER.

DISEASES.	Total number treated.	Number traced.	Perfect result.	Good result.	No improvement.	Bad result.	Died.	Died after leaving hospital.
APPENDICITIS:								
General peritonitis from appendicitis	8	7	.	1	.	.	6	.
Appendicitis; wound drained	19	17	6	9	.	.	1	1
Appendicitis; wound closed	16	9	3	6	.	.	.	.
HERNIA:								
Strangulated	2	2	.	.	.	.	2	.
Inguinal	14	7	6	1	.	.	.	.
Ventral	4	1	.	.	.	.	1	.
Other forms	2	1	.	1	.	.	.	.
MISCELLANEOUS LAPAROTOMIES:								
Fibroid of uterus	4	1	1	.	.	.	.	.
Pelvic abscess	4	2	.	.	.	.	1	1
Ovarian cyst	2	1	1	.	.	.	.	.
Ovarian fibroma	1	1	1	.	.	.	.	.
Ovarian papilloma	2	1	.	.	.	.	.	1
Closure of fecal fistula	2	2	1	1	.	.	.	.
Operation on gall bladder	6	6	.	3	.	.	2	1
Cancer of cervix uteri (hysterectomy)	3	1	.	1	.	.	.	.
Intestinal tuberculosis	2	2	.	1	.	.	1	.
Mesenteric thrombosis	1	1	.	.	.	.	1	.
Sarcoma of intestine	1	1	.	.	.	.	1	.
Cancer of sigmoid (resection)	1	1	.	.	.	.	1	.
Partial intestinal obstruction (adhesions)	1	1	.	.	.	.	1	.
Other cases	6	6	.	1	1	.	1	3
GYNECOLOGICAL CASES:								
Extra-uterine pregnancy (vag. op.)	1	.	.	1	.	.	.	.
Pelvic abscess (salpingitis) (vag. op.)	4	4	.	4	.	.	.	.
Salpingitis (no operation)	3	1	.	1	.	.	.	.
Cancer of cervix	4	2	.	1	.	.	.	1
Ventral fixation (usually appendectomy, also)	7	5	.	4	1	.	.	.
Repair of cervix or perineum or both	5	1	.	.	1	.	.	.
Dilating and curetting	3	1	.	.	1	.	.	.
Complete repair, cervix and perineum and V. F.	7	6	2	4	.	.	.	.
GENITO-URINARY CASES:								
Prostatic hypertrophy (Alexander's op.)	5	5	1	2	1	.	1	.
Strictures	13	5	2	3	.	.	.	1
Miscellaneous G. U. cases	12	4	.	1	.	.	.	.
HEAD INJURIES:								
Compound fracture of skull	6	5	1	1	.	.	3	.
Fracture of the base	3	2	.	1	.	.	1	.
Concussion	6	1	.	1	.	.	.	.
Bone and joint disease	29	13	2	8	2	.	.	.
Fistula in ano	2	1	1	.	.	.	.	.
Empyema	3	2	.	2	.	.	.	.
Cancer of breast	12	6	2	2	.	.	.	2
Hemorrhoids	5	2	1	.	.	1	.	.
Miscellaneous malignant cases	25	12	3	3	.	.	2	4
Accident cases	24	12	3	4	.	.	1	.
Amputations	8	7	.	.	.	.	.	.
Miscellaneous cases	28	22	9	8	2	.	2	1
Fractures of various kinds	49	20	3	14	.	1	2	.
	365	210	47	92	9	3	35	16

Explanation. — Most of the results were seen personally by Dr. Harrington or by Dr. Codman. A few who replied by letter are included. The results of cases as seen at the time of discharge and not heard from later are not given, because such figures can easily be obtained from the annual report.

Perfect results are not discussed in the remarks at the end, because they are perfect and speak for themselves. Good results include those cases which, while they showed some benefit from the operation, were, nevertheless, not completely relieved. In what respects these lacked perfection is explained in the remarks.

REMARKS ON THE CASES IN WHICH THE RESULTS WERE NOT PERFECT.

General peritonitis from appendicitis. — One of these which was not operated on died. Another drowned suddenly a week after the operation from the perforation of a subphrenic abscess into a bronchus. The one considered "good" had later an abscess in the abdominal wall, and is now well. Two or more successful cases which might justly be considered general peritonitis are included under the next heading.

Appendicitis; wound drained. — The fatal case died of post-operative intestinal obstruction; three other cases had successful operations for this condition shortly after their first operation, and though they are now well are classed as good results instead of perfect. Of the six other good results, three are well, except for hernia in the scars. The other three complain of occasional pain or constipation; one died after leaving the hospital (cause unknown).

Appendicitis; wound closed. — The six good results have more or less complaint of constipation, distress from wind and indefinite pain. In one case it is hard to see what good the operation has done except to eliminate the appendix.

Hernia. — Two deaths were in cases of gangrenous strangulated hernia, in which resection was done. One was due to exhaustion following an operation for repair of a large ventral hernia, consequent to an acute appendicitis the year before. One patient with double inguinal hernia has had recurrence on one side. A patient with femoral hernia writes that she still has pain in her wound.

Miscellaneous laparotomies. — One case of fibroid in which hysterectomy was done still flows regularly for only one day at a time. One case of pelvic abscess of unknown origin died under chloroform when in a moribund condition; the other died a year later of cancer of the stomach. An ovarian cyst (the size of a full term uterus) with a twisted pedicle and a large fibroma of the ovary were reported well, but were not seen. One fecal fistula still has a small sinus. In this case a large round worm was removed incidentally by enterostomy at the operation. The other case of fecal fistula had had four previous operations for salpingitis, broad ligament cyst and abdominal sinuses. At the last operation two fecal fistulæ were closed. She is now well. Two cholecystotomies have hernias in the scars, but are otherwise well. One has not been "quite strong" since the operation. One was well for six months, had recurrence, then the morphine habit and died last summer from persistent vomiting following cholecystectomy. One case of gangrene of gall bladder died of general peritonitis. One died of shock. A case where hysterectomy was done for advanced cancer of the cervix uteri was free from signs of recurrence for eighteen months. It has now recurred (March, 1903). A case of resection of several feet of intestine for tubercular stenosis died of pneumonia (tubercular)? while convalescent. Of the six other cases, five were exploratory laparotomies. In one, gastro-enterostomy for cancer of stomach gave considerable relief, and the patient died nearly a year later. In a case of probable chronic pancreatitis, and in one of peritoneal cancer, nothing was accomplished. In a case of cirrhrosis of the liver, very little was accomplished. A case of gunshot wound of the kidney, liver and lung died. A case with symptoms of acute appendicitis, but in which the appendix did not account for the peritonitis, has been well since.

Gynecological cases. — The case of extra-uterine pregnancy operated on by vagina has not felt well since. Her symptoms point to adhesions. *Pelvic abscess.* — All four cases of pelvic abscess operated on by vagina were temporarily good results, but all still have symptoms of more or less severity referable to an inflammatory condition in the pelvis. The same may be said of a single case which was not operated on. Of the two cases of cancer of cervix (curetted) traced, one lived in comparative comfort for nearly a year, when she re-entered and again was curetted; the other "suffered untold agony," and died seven months later. *Ventralfixation.* — In five of the seven cases of ventralfixation appendectomy was also performed; two cases were symptomatically well, but were not examined; two others had anatomically perfect results, but their symptomatic improvement was questionable. One extremely neurasthenic patient wrote that she was no better for the operation. *Repair of cervix and perineum.* — The one case which replied is an invalid from severe osteoarthritis of the spine. Probably she should not have been operated on. *Dilating and curetting.* — This operation was of course usually done also in conjunction with the other gynecological operations. In the one case of "no improvement" it was done for sterility. *Complete repair.* — Of the four good results, in one, retroversion has returned; one has had considerable distress during pregnancy; one says she is well but "not quite comfortable"; one has had a great deal of distress from a neglected wick in the uterus, but is now well.

Genito-urinary cases. Prostatic hypertrophy, in which Alexander's operation was done. — One result considered good has a very small perineal fistula, but is otherwise well. One case has a little cystitis and has to wear a urinal because he has not complete control. The case which has not improved was previously operated on, and has since been successfully operated on by Dr. Elliot. One case died from shock. *Strictures.* — Of the two "perfect" results, one was from perineal section, the other from divulsion; of the three "good," one was perineal section and two divulsions; of the *miscellaneous genito-urinary cases*, only one is of interest: a case of orchidectomy for tubercular epididymitis, died three months later from tubercular meningitis.

Head Cases. Compound fracture of skull. — The one "good" began to have epileptic fits in about six months. He has since been in Dr. Warren's service for a fracture of the base sustained during a convulsion. *Fracture of the base.* — One still has a slight facial paralysis and left-sided headache. *Concussion.* — One case of concussion has certain areas of paresthesia and diplopia.

Bone and joint disease. — Perfect results: a typhoid periostitis and a deformity following mal-union of femur. Good results: the case of osteochondroma reported at the last clinical meeting; adhesions of knee joint; plastic on necrosis of tibia; tuberculosis of wrist tendons; fringes in knee joint; tuberculosis of shoulder (excision); necrosis of jaw. The eighth case was one of contracted ankylosed knee joint following gonorrhea. An attempt to break adhesions broke the tibia, and was equivalent to osteotomy in straightening the leg. No improvement except alleviation of pain occurred in a case of osteomyelitis of the tibia and in an osteoarthritis of the hip joint. A case of double hip disease is worse than at discharge (operated on in a later service).

Empyema. — A thoraco-plasty for old empyema was partially successful. The patient still comes to the O. P. D. with a large cavity. The other case later had an abscess of the lung, which was operated on successfully.

Cancer of the breast. — Two had been operated on in the summer of 1900 and returned for recurrent nodules. In one case these proved to contain no cancer, and the patient is still free from signs of recurrence (February, 1903). In the other case the patient has lately had recurrence. In two cases there was a large amount of growth in both breasts, and it was known at the operation that all disease was not removed. One of these died some months later, and Dr. Wright found that the disease was probably metastatic from the ovary. The two results considered "good" had small nodules of recurrence.

Hemorrhoids. — One case has a serious cicatricial contraction. The case was a very bad one with ulceration. It could not be properly reduced after operation, and the patient was very ill with alarming abdominal symptoms.

Miscellaneous malignant cases. — The three perfect results were: an epthelioma of the lip; a case supposed to be metastasis of lung (which proved to be phthisis) following an amputation of arm for sarcoma the year before; a case supposed to be a recurrence from a partial resection of the jaw the year before. (This proved to be an inflammatory gland.) The good results were in a large nevus of the face, a parotid sarcoma, and a myxosarcoma of the dorsum of the foot. All three showed small areas of recurrence. The case of parotid sarcoma was first operated on eighteen years before. Of the twelve cases which did not report, radical operation was not attempted in six.

Accident cases. — Two cases only were of much interest. A heavy man slid down a sand bank with his legs apart and struck on an upright crow-bar. The bar entered the ischiorectal fossa beside the anus and passed through the sacrum, appearing on the back near the posterior-inferior spine of the ilium. The wound was douched and drained by a wick passing through it. A year later he was well except for a small sinus. A stout woman with irreducible dislocation of the shoulder was sent in for resection of the head of the bone. It was thought unwise to do this. A year later she returned with a very serviceable arm. The deformity was scarcely noticeable and the motions were good, except in putting the hand to the back of the neck or the back of the waist.

Amputations. — All seven complain of slight pain in stump.

Fractures. — Twenty-six of the forty-nine were of the lower leg. Three results were perfect, one of the thigh, one of the tibia and one of the jaw. The latter was not examined, but reported by letter. He was treated with Dr. Moriarty's splint after leaving the hospital. Each of the good results had some slight complaint; for example, flat foot, pain on long standing, swelling of leg, stiffness of ankle joint, etc. The bad result was the fracture of the neck of the femur in a huge woman. She is still helpless. Three good results were in cases of fracture of the patella, which were sutured with chronic catgut. All had slight limitation in extreme flexion.

The following cases died during or after the service:

Cases which died unoperated: general peritonitis, two cases of compound fracture of skull, carcinoma of rectum, multiple burns, gunshot wound of chest, delirium tremens, ruptured spleen, multiple injuries, fracture of pelvis, multiple fractures.

Cases in which death was probably hastened by operation: appendix abscess, ventral hernia, gallstones, intestinal tuberculosis, cancer of sigmoid, partial obstruction from adhesions, prostatic hypertrophy, sarcoma of thigh.

Cases in which death was probably not hastened, or not more than a few days, by operation: five cases of general peritonitis, two of strangulated hernia, pelvic abscess, general peritonitis from gangrene of gall bladder, mesenteric thrombosis, sarcoma of intestine, gunshot wound of liver, etc., two skull fractures, abscess of cheek, osteomyelitis of humerus (septicemia).

Cases which died after leaving the hospital: appendix abscess (cause unknown), pelvic abscess (cancer of stomach), papilloma of ovary, gallstones (cholecystectomy), cirrhosis of liver, cancer stomach, cancer of peritoneum, cancer of cervix, tubercular epididymitis (meningitis), two of cancer of breast, cancer of larynx, cancer of penis, sarcoma of nose, epithelioma of cheek, tuberculosis of kidney.

Dr. Codman also showed three cases illustrating points in the surgery of the knee joint.

CASE I. I show this patient to demonstrate a point for which I am indebted to Dr. Tenney of the City Hospital.

The point is this, that in some, probably in many, dislocations of the semilunar cartilage, the posterior portion is folded over the anterior so that the whole cartilage lies in front of the bearing of the joint. Thus when the joint is extended locking occurs.

This patient entered the accident room on the 8th of last September, with the cartilage dislocated, and with a history of many previous dislocations during the preceding seven months. I therefore did not reduce it, but the next day opened the joint under ether, and found the cartilage dislocated exactly as shown in this model. I excised the whole cartilage, and the patient left the hospital well in three weeks. The joint is apparently perfect, and gives him no trouble. Usually in these cases the operation is done when the cartilage is back in place, and nothing is seen but a cracked or damaged portion in the middle where the bend occurs. In such cases it is important to fish out the whole posterior half. Perhaps this can be more easily done by first dislocating the cartilage.

CASE II. This patient illustrates a wholly different form of lesion, which is often confused with the type found in the other patient. This is a case of "loose cartilage," or "joint mouse."

In this patient *certainly* the "mice" were chips of articular cartilage, and his case proves to me a point which I have long suspected. I think that most men would say that these mice arose from several different sources, and that few would speak of their being actual pieces of articular cartilage with a little of the underlying bone. The sources commonly mentioned are: Concretions of fibrin, bits of semilunar cartilage, fragments of fringes or fat which have become free in the joint and calcified, or marginal osteophites which have been broken off.

In 1895, when assisting at an operation for this condition, I noticed a stellate scar on the articular surface of the internal condyle. This scar was a little smaller than the "mouse" removed. Since then I have seen the same thing in the cases of other surgeons a number of times. In 1900 I operated on a case in which the mouse nearly fitted the scar.

In this patient before you I found two mice in the right knee and four in the left. One was still hung to the articular surface by a hinge of cartilage. Another had evidently just come out, and could be accurately fitted into its former bed, the base of which was bare bone. A third had been free some time, was crusted, and was considerably too big for its former place.

These bodies are on the card which I hand about. There are also a few other specimens which other surgeons have removed, which show the same structure and therefore probably had the same origin. The first two pieces on the card were taken from the joint of a cadaver after striking a blow with a mallet; on opening the joint these pieces were found still *in situ*, and resembled the depressed fragments of a skull fracture. I picked them out with a director. They resembled very closely the pieces found in this patient.

The point of all this is that when a joint is opened to remove a mouse, it is best to put your finger in and feel of the articular surface of the internal condyle to see if there are other mice in the process of formation. In this case the

patient would not have been cured had I not done so, and as it was, the fourth mouse was removed at a second operation.

I believe that the origin of these bodies is, as a rule, primarily traumatic, and due to a fall on the flexed knee. The articular cartilage on the internal condyle is not protected in flexion. A depressed fracture occurs, followed later by loosening of the chip (perhaps by granulations growing up in the cracks). When the chip is free, it still continues to grow, either by actual growth or by accumulation of fibrin.

Dr. Whitney has kindly made some sections for me of similar bodies removed by Dr. Cabot. On one side you may see articular cartilage, on the other cancellated bone.

I may say that in looking up the question of origin of these bodies, I find a voluminous literature, and that the manner of growth after the body becomes free in the joint is of especial interest. The fact that the growth seems to be chiefly in the cancellated portion, and that in some cases the cellular elements are still capable of staining, seems to point to actual activity of the osteoblasts. *A priori*, however, one would think that growth by concretion and the slow deposit of lime salts would be more likely.

Case III. My third case I take a good deal of pride in, because I freely disobeyed surgical rules in not operating.

This boy entered with a punctured wound of the knee joint discharging pus containing streptococci and staphylococci. I contented myself with enlarging the wound to about half an inch and washing the joint out with salt solution. Believing that the natural discharge of serum would constantly tend to drive out the bacteria, I did not damage the joint by the introduction of tubing or gauze drains, and merely kept the lips of the wound apart with protective. In spite of a picket fence temperature, of a great deal of pain and tenderness and septicemic symptoms, I maintained the same policy without even irrigating the joint again. The resulting practically free joint justifies my conservatism in this one case.

Dr. Whitney: The question of the growth and development of these foreign bodies in the knee joint is certainly very interesting. These cells stain very well, but whether they are still capable of producing bone is a question. It will be only by very careful examination of future cases that we shall find out.

Medical Progress.

REPORT ON PROGRESS OF SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D., BOSTON.

(Concluded from No. 16, page 433.)

THE VALUE OF ENTEROSTOMY IN SELECTED CASES OF PERITONITIS.

F. B. Lund[8] gives the following summary as to the indications for this operation: Enterostomy is indicated for obstruction or paralytic distention of the intestine from whatever cause, after the ordinary means for relief of such distention have failed. It is especially applicable for distention after operations for acute appendicitis or general peritonitis. Under such circumstances it may restore to life cases in which death seems inevitable. Secondary ileostomy is the operation of choice. Local anesthesia is to be preferred. The subsequent operation for closure of the fecal fistula is usually safe and successful.

[8] Journ. Amer. Med. Ass., July 11, 1903.

THE EPIDEMIC NATURE OF APPENDICITIS.

A very complete monograph on appendicitis by Rostovtzeff forms an important contribution to the subject. He does not recognize the epidemic nature of the disease, contrary to N. Golouboff,[9] who in 1897 put forth the view, as based on clinical data, that inflammation of the vermiform appendix was an epidemic infectious disease. In this opinion he is supported by no less an authority than the famous French surgeon Lucas-Championniere, who considers appendicitis as a new disease of an undoubtedly epidemic character and especially prevalent in England and in the United States. Professor Charrin of Paris considered the subject important enough to conduct a series of laboratory experiments, the results of which he embodied in a "Report on Experimental Epidemic Appendicitis." There is no doubt that many of the most prominent surgeons seem to be inclined to consider appendicitis as an epidemic infectious disease, and the more the disease is being studied, the stronger becomes this view. Dieulafoy goes so far as to call appendicitis *maladie toxi-infectieuse*. The author finds that in appendicitis, as in other infectious diseases, there occur icterus, acute nephritis, multiple arthritic inflammations, etc.; he even observed in two cases enlarged spleens. In concluding, the author draws the following: (1) Appendicitis is an infectious disease; (2) in many of the cases appendicitis appears as a primary independent affection of the appendix, in the way that tonsillitis represents an inflammation of the tonsillary glands; (3) during the last eight to ten years the number of appendicitis cases has increased progressively, taking the character of an epidemic, or even endemic prevalence; (4) this prevalence is of a distinct, undoubted nature, as observed by Sonnenburg in 1899, in certain localities in Berlin and Frankfort.

[9] Prakt. Vrach., No. 29, 1903. Med. News, Sept. 12, 1903.

NOTES ON EXPERIMENTAL SURGERY: A MODIFICATION OF THE MCGRAW ELASTIC LIGATURE.

Maury, J. W. Draper,[10] gives a report of experimental work which he did by the authorization of the Department of Surgery of Columbia University. In April last he began a series of laboratory experiments which aimed at finding a method so to place the elastic ligature that it would "punch out." He states that from his too small and confessedly incomplete series of experiments the following conclusions suggest themselves:

[10] Med. News, Sept. 12, 1903.

(1) The McGraw elastic ligature can be so inserted as to " punch out " as large an area of the juxtaposing walls as may be desired, with at least as much certainty and with greater safety than the Murphy button.

(2) That the margins of such openings are smooth and not unduly cicatrized.

(3) That the elastic ligature may remain *in situ* after punching the openings, although this is less likely to happen if tied with iodized catgut.

(4) That such retention in the mucosa of so soft a material is not apt to be harmful or permanent.

(5) That the time required is not sufficiently increased to render the use of this technic impractical.

(6) That perhaps enough has been suggested to stimulate further research by others, so that the actual facts in these most interesting problems may shortly be brought to light.

TREATMENT OF FISSURE AND PROLAPSE OF RECTUM.

Czerny [11] describes a case of prolapse treated by operative intervention through a parasacral incision exposing the rectum and taking a lengthwise tuck in it with a row of button sutures. The stitches did not pass into the mucosa, and the tuck projected toward the lumen of the intestine. The rectal wall was sutured at the same time with several catgut stitches to the severed fibers of the ligaments. By these procedures the wall of the rectum was made smaller and stiffer and it was suspended, thus completely counteracting the tendency to prolapse. He treats fissure by excision in profound anesthesia, uniting afterward the tip of the wound in the mucosa with the opposite point of the wound in the skin, drawing it out for the purpose by a suture passed through the mucosa at the tip of the incision. The rest of the wound is united with two to four stitches. The fissure is thus radically extirpated and the defect left is lined with sound mucosa. He has found the operation a success in his six cases treated in this way.

COLITIS.

C. L. Gibson [12] redescribes his method suggested in 1902. It consists particularly in reproducing the technic of Kader's gastrostomy, making a valvular opening into the intestine and introducing a drainage tube through which treatment can be carried on. When it is removed the valvular arrangement completely closes it and to obtain permanent closure of the fistula when required it is only necessary to discontinue the treatment by omitting to pass the catheter into the gut. The Weir modification of this, with the use of the appendix, has the apparent advantage of making the simple operation still simpler, but the valvular formation is wanting and the after-treatment is less agreeable. Gibson says that the results of this operation have been such as to justify the hope of marked amelioration or cure of the symptoms, while it offers the advantage that it is devoid of every disagreeable feature of an artificial anus. It calls for only a short confinement to bed. If a prolonged course of treatment is required, it may be carried out if necessary by the patient himself. A change of climate, so often beneficial, is made possible. Its performance is perfectly simple and safe. The intermuscular incision greatly reduces the risk of a subsequent hernia, and the prompt closure of the fistula is certain and spontaneous.

[11] Beitr. zur klin. Chir. (v. Brun's), Tubingen. Journ. Amer. Med. Ass., Sept. 26, 1903.

[12] Med. Rec., N. Y., Sept. 12, 1903. Journ. Amer. Med. Ass., Sept. 26, 1903.

GALLSTONE DISEASE.

Mayo [13] remarks on the success of gall-bladder surgery. In 582 operations, he has had but 17, or 3%, that required a secondary operation. It is possible, however, that others may have operated on some of his cases, so this figure is not absolute. Experience has taught him how to get over the defects of his earlier work and avoid the causes which lead to subsequent troubles. He remarks in this connection that a few patients who have had cholecystotomy performed will have a colic or two and transient jaundice within the first month or two after the operation, but usually these do not recur. They are probably due to the non-emptying of the crippled gall bladder with sufficient promptness. Unless there is more than a single spell of pain after closure of the fistula a secondary operation may not be required. The common cause of secondary symptoms is incomplete removal of stones. This, however, is avoidable with sufficient care. Stones in the cystic duct may escape attention, hence the importance of great care in its exploration. In such cases if the stone completely obstructs the duct he clamps it below the obstruction and cuts it off and then performs cholecystectomy from below upward. It may be done almost without cutting by simple traction. It is important to explore the ducts with the fingers before opening the gall bladder in every case, as stones are sometimes overlooked in the common duct, where they may lie quiescent for years. One cause of failure from cholecystotomy is from secondary obstruction of the cystic duct, possibly eventuating in a mucous fistula or repeated attacks of colic; hence the advisability of generally excising the gall bladder whenever the cystic duct is involved. In this way he has in his later practice eliminated this most common cause of secondary trouble. In septic cases long-continued drainage is necessary; severe symptoms may follow too early closing of the fistula. Cancer may be said to be secondary to stone formation and may occur after operation or, if present, be mistaken for inflammatory conditions. All thick-walled gall bladders should be looked on with suspicion. As they are functionally useless, cholecystectomy is better than cholecystotomy. Chronic pancreatitis may exist at the time of operation and require long-continued drainage. The condition of the pancreas should be observed at the same time as that of the ducts. If disease is present there is the choice of cholecystenterostomy with the Murphy button in addition to removing the stone, or of draining for a long time. In the one uncomplicated case in his experience

[13] St. Paul's Med. Journ., August. Journ. Amer. Med. Ass., Sept. 19, 1903.

which required a secondary operation, the gall bladder was very large and the fistula did not close. On dissecting out the gall bladder it was found that by low attachment to the abdominal incision it had formed a channel in which, in certain positions of the body, bile would gravitate outward. After cholecystotomy the gall bladder should be attached as high up in the incision as convenient. Persistent biliary fistula usually means obstruction of the common duct. He holds that every one understands the importance of not attaching the gall bladder to the skin. In earlier days persistent biliary fistula was usually due to the mucocutaneous suture, the evils of which he does not need to point out. The turning in of the margins of the incision in the gall bladder and the tying of a purse-string suture closely about the drainage tube, as in Kader's gastrostomy, hastens the healing of the fistula. Two possible or rather common causes of failure to effect a perfect cure that cannot always be avoided are post-operative adhesions — those to the stomach and duodenum are the most common and may require secondary separation with the use of Cargile's membrane — and hernia, which is not usually troublesome. It may follow a long incision in obese people. While the adhesions usually relieve themselves by stretching, he does not allow the gauze drains to come in contact with the stomach and duodenum on account of their possible development, but interposes a piece of rubber tissue and leaves it from six to eight days, until the adherent films surrounding the drains become organized. To avoid hernia, he makes a secondary opening outside the working incision in cases where it is at all likely to occur, close to the ribs, and through this the drainage matter may be brought out. This enables us to carefully close the full length of the original incision. The necessity of this is increased if the opening has been extended downward to remove the appendix.

SHOULDER DISLOCATION.

Beck [14] reports a case where, on account of a recurrent humeroacromial dislocation of the shoulder, he operated by exposing the acromial surface of the capsule, which was found to be so much relaxed that a fold could be taken up and contracted by making a purse-string suture in it. At the same time a hole was drilled into the head of the humerus and into the acromion, and a medium silver wire carried through it to ensure retention of the head by adhesion formation. There was no evidence of rupture of the supraspinatus muscles, or infraspinatus, causing rupture of the capsule or any abnormality of the joint. The operation was followed by no reaction and when the wire was removed five weeks later the result was good. Six months after operation it appears perfect.

DANGERS OF THE TRENDELENBURG POSITION.

Professor Kraske (Freiburg) [15] said that although the Trendelenburg position was attended by manifold advantages under numerous conditions, it might nevertheless occasionally lead to serious accidents. Instances of paresis of the peritoneal muscles and emphysema of the abdominal walls had already been recorded. These were only temporary lesions and their after-effects were of little, if any, consequence, but the interference with the circulation which attended the production of anesthesia in the Trendelenburg position was of much greater importance. In two cases of myocarditis the administration of ether as an anesthetic led to a fatal issue, which, in Professor Kraske's opinion, was due to acute dilatation of the heart, the result of increased blood pressure caused by the Trendelenburg position. In a third case the patient suffered from ileus for four days but recovered on the fifth day. In a fourth case in which the symptoms of ileus became very alarming, he reopened the abdominal wound and found that the omentum was doubled up and lying above the liver, the effect being to cause obstruction of the transverse colon. He freed the omentum, but the patient died. Similar observations had been made by Professor Schauta of Vienna, who found that after the intestine had undergone displacement, in consequence of the employment of the Trendelenburg position, it did not spontaneously return to its normal place when the patient lay horizontally; he therefore recommended that the surgeon before closing the abdominal wound should correct any displacement of the intestines there might be. Professor Kraske was of opinion that the hematemesis observed after laparotomy was due to distention of the gastric veins.

Professor Trendelenburg said that he doubted whether the cardiac embarrassment in the case of myocarditis mentioned by Professor Kraske was really caused by the elevation of the patient's pelvis and lower extremities. Such patients were not good subjects for the inhalation of an anesthetic, in whatever position they might be. With very corpulent patients he did not employ elevation of the pelvis for more than five or ten minutes at a time.

LYMPHATICS OF ESOPHAGUS REGION.

K. Sakata [16] writes as follows: Injection of the cadavers of children by Gerota's method showed that the lymphatics of this region originate in two separate sets, with no direct communication between them. The first set is arranged lengthwise in the lower layer of the mucosa, while the second is not so large nor so regular and forms a network on the surface of the perimysium. The lymphatics communicate directly with those of the pharynx above and those of the stomach below, although the intervening vessels may run a long way in the submucous tissue or against the wall before reaching them. The close clustering of glands around the recurrent nerve explains the paralysis of this nerve frequently observed in cases of carcinoma of the esophagus. He noted

[14] N. Y. Med. Journ., July 11, 1903. Journ. Amer. Med. Ass., July 25, 1903.
[15] Lancet, July 11, 1903.
[16] Mitteil. a. d. Grenzgeb., Jena. Journ. Amer. Med. Ass., Sept. 26, 1903.

it in 18 out of 236 cases, and in 13 it was unilateral. The glands may, therefore, be grouped as the near and the distant. The latter are represented by the deep, lower cervical glands, found in the angle formed by the subclavian and internal jugular veins.

Reports of Societies.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

SEVENTEENTH ANNUAL MEETING, HELD MAY 12, 1903, WASHINGTON, D. C.

(Continued from No. 16, p. 437.)

REPORT OF A CASE OF COMPLETE AVULSION OF THE SCROTUM, THE SKIN OF THE PENIS AND THE LEFT TESTIS.

DR. ALFRED C. WOOD of Philadelphia related the instance of a man thirty-three years old who was engaged in making an adjustment of a ball upon a revolving shaft. His clothing caught, and he was taken around a few times and dropped upon the floor. He was taken to the hospital, and the doctor saw him within half an hour after the accident. The scrotum was found to be entirely absent, and the skin of the penis was dissected off as clean as could be, well up to the muco-cutaneous junction. The left testicle was absent and the right testicle was left exposed in the wound. Hemorrhage from the torn cord was readily controlled. It became a problem to know how to cover the testis. Flaps were finally taken from either thigh and utilized. The patient remained in the hospital about one month, when the testis was well covered. The Reverdin method of skin grafting was employed to cover the penis, small fragments of skin being taken from time to time from the thigh, with the result being all that could be expected. His sexual relations appeared to be perfectly normal.

DR. RAMON GUITERAS of New York cited the instance of an Italian who had gangrene of the scrotum. The scrotum had entirely sloughed away, leaving both testes exposed. An artificial scrotum was made by taking flaps, two from above the pubes and two from below on the inner side of the thigh, all four flaps being egg-shaped and brought together somewhat like the cover of a baseball.

A NEW METHOD OF PERFORMING PERINEAL SECTION WITHOUT A GUIDE.

DR. CHARLES L. GIBSON of New York presented this communication. A description of his method has already appeared in the report of the Section on Genito-Urinary Surgery, New York Academy of Medicine.

THE CONSERVATIVE TREATMENT OF CASES OF TUBERCULOSIS OF THE GENITO-URINARY TRACT.

DR. GEORGE CHISMORE of San Francisco read this paper. He said that improved methods of diagnosis and a clearer recognition of clinical symptoms had brought us to the conclusion that tuberculosis of the genito-urinary tract was far more commonly encountered than was formerly believed, and that such cases were always prolonged in duration, rebellious to treatment and very grave in character. He gave the histories of several cases that had been under his observation for some time, intending to show that it was possible for a person afflicted with undoubted tuberculosis of the genito-urinary tract to live for years a useful life, without surgical attempts to remove the infected organs. In three of these cases the exciting causes were traumatic, falls and muscular strains. Heredity was not at all marked. In one case there was no tubercular history. One of his children married a man who had tubercular epididymitis, for which he had been curetted a year before with apparent recovery. He died in a year of tubercular perforation of the intestine, verified at autopsy, and his widow soon began to void urine frequently; tubercle bacilli were found in her urine, proven by culture, for several months, although she suffered only from frequent micturition. She married again after two years, and soon returned to perfect health. In three of the cases, frequency in micturition was the marked early feature. In all the kidney or bladder, or both, were involved. In other cases the disease seemed to be limited to the scrotal contents, but never when the urethræ were not invaded by instruments or irritants. Such an observation had led him to abstain from all local measures that were not imperatively demanded in cases of suspected tuberculosis of the genito-urinary tract. This explained to him why so many of these cases had the prostate gland affected.

DR. HUGH H. YOUNG of Baltimore did not think we should or could expect so much in the way of conservative treatment as Dr. Chismore, because of climatic differences.

DR. ARTHUR T. CABOT of Boston believed that the hygienic treatment of certain cases was better, especially when the tuberculosis was disseminated through a complicated series of channels or organs. Now and then the disease would locate itself in the epididymis, for instance, and then operation would be called for. He believed that if we operated at all we should be forced to do so, and not select such a course as the best for the patient. Where tuberculosis started in one kidney, and he found such a condition before the bladder became involved, he believed in the thorough removal of that kidney, and had seen brilliant results follow such a procedure.

DR. W. K. OTIS of New York said that no cases appeared alike in genito-urinary tuberculosis, and, therefore, we were unable to tell what was going to happen when any one method of treatment was employed. He had never been able to find any satisfactory agent for local treatment of a tubercular cystitis. He much favored the let-alone treatment in all cases of genito-urinary tuberculosis. However, when surgical treatment was deemed advisable, it should be done most thoroughly.

Dr. John Van der Poel of New York reported a case of tuberculosis of the left testis with secondary involvement of the prostate as he then thought. An abscess which had occurred in the epididymis of the left side had taken care of itself, but an absolute diagnosis could not be made by that alone. Massage of the prostate showed tubercle bacilli, and an operation was advised. The testis itself did not seem to be involved, but the epididymis was removed, thinking it alone was infected. Upon a microscopical examination it was shown that the incision was made directly through diseased tissues, though the testis itself seemed normal. Subsequently operation was necessary to remove the testis as well as that of the opposite side. This case he said demonstrated how careful one should be in advising a partial operation. The case was drained through in the groin of the left side, and the ultimate result was good.

Dr. Paul Thorndike of Boston said that in cases of more or less advanced tuberculosis, where it seemed advisable to make a palliative operation for the patient's comfort, one would necessarily be deterred from so operating because of the possibility of not removing all the diseased tissue. He said that you may not expect to get all the diseased tissue, but that in nineteen-twentieths of the cases you would place the patients in better conditions. He would even go further than Dr. Cabot and take out a badly tuberculosed kidney even when the other kidney was involved, providing he was sure of doing the patient some good by this procedure. He emphasized the point that we should not be deterred from operating because of fear that we could not remove all the diseased tissue.

A CASE OF CALCULUS ANURIA RELIEVED BY OPERATION.

Dr. Arthur Tracy Cabot of Boston read this paper, and said that these cases were so rare and fraught with such serious consequences that it was of the utmost importance to accurately study and report those that came under observation. The patient was a strong, vigorous man of fifty-seven years of age who, for fifteen years, had suffered from severe pain in the right lumbar region, the pain shooting down into the right groin and into the penis. These attacks occurred about once a year, and were accompanied by nausea, vomiting and a bloody urine. Frequently they were followed by the passage of stones from the bladder, some being one-third of an inch in diameter. Two years ago he had an attack occurring upon the left side. During the past year he had had these attacks upon the right side about once a week. For the past three weeks he had persistent, almost constant, pain in the right side with nausea and vomiting each day, but no stones were passed. Only 2 or 3 oz. of urine was voided in twenty-four hours. Burning pain occurred in the glans penis. There was great tenderness and rigidity in the right lumbar region, and a sense of great and deep resistance over the right kidney. No prostatic enlargement existed. A skiagraph showed no calculi in the bladder or kidney. He saw the patient twenty-four hours after his admission to the hospital, during which time no urine could be withdrawn by the catheter, and it seemed probable that the right kidney was stopped by a calculus, and that the left kidney was practically useless. The severe attacks in the right kidney were supposed to account for its inactivity. The right kidney was cut down upon, and was so large that it was with difficulty lifted out of the wound. It was dark purple in color and dotted with little yellow spots, strongly suggesting miliary tubercles. One of these little abscesses contained a few indeterminate crystals. The pelvis of the kidney was opened and explored, but nothing was found. The ureter was followed down into the bladder, but nothing could be felt. A drainage tube was introduced into the renal pelvis, the capsule was split along its convexity, and the wound was closed so far as drainage would allow. Within the next twenty-four hours the patient passed 900 cc. of urine; in the next, 1,500 cc., and as much more was supposed to have escaped into the dressings. On the fourth day the urine suddenly ceased coming through the bladder, and a proportionate amount escaped through into the dressings. Some hours later urination by the bladder was resumed and drainage through the tube then diminished. On the eighth day the tube was removed, and leakage through the wound quickly stopped. On the fourteenth day the bladder was washed out, and two stones of about the size of a grain of wheat were obtained and a larger stone was felt to click against the Bigelow evacuator. This stone measured 1 cm. in diameter. This was crushed and pumped out on the twenty-fourth day. From this time recovery was practically uneventful. After convalescence the bladder was examined by the cystoscope. The right ureter was three times the normal size, and the urine could be seen coming from it in nets. The left ureter was occupied and filled by a string of thick pus, which was not moved or stirred by any urine escaping alongside of it. Cystoscopic examination on the following day showed the left ureteral orifice occupied by this plug of pus. With this orifice kept in view, an assistant made pressure over the left kidney, and at once a gush of thick pus was seen to come from the ureter. As a result of this observation, and from the fact that the right kidney ceased to send its urine into the bladder, it seemed to be proved beyond question that the left kidney was practically destroyed. This case, taken in connection with the case of calculus reported by the speaker in 1893, showed the importance of thoroughly stripping the ureter in these cases where the stone cannot be felt.

Dr. Ramon Guiteras of New York reported the case of a Canadian who sufferred from hematuria. From his past history he thought of stone in the ureter. A local x-ray worker denied the existence of stone, but Dr. Leonard of Philadelphia said one was present just where the

ureter passed over the pelvic brim. Operation was performed, and just at the point named by Dr. Leonard there was a bulging of the ureter of fusiform character. Palpation of it revealed no stone. It was incised, but no stone was found, but a large mass of thick yellow pus of the consistence of Camembert cheese was noted. The ureter was stripped down into the pelvis. The patient's hematuria ceased. Although no stone was seen, he thought the probabilities were that there had been one which had passed down into the bladder and escaped through a large perineal opening which the patient had.

(To be continued.)

Recent Literature.

How to Keep Well. An Explanation of Modern Methods of Preventing Disease. By FLOYD M. CRANDALL, M.D. New York: Doubleday, Page & Co. 1903.

This is a small octavo of 500 pages, and is designed more especially for the use of readers without a medical education. It is divided into nineteen chapters, preceded by an introduction. The author admits that much light is nowadays offered upon medical subjects, but, in his opinion, the quack usually holds the candle. Moreover, he thinks that the medical profession is to a certain extent to be blamed for this state of affairs, in that it has frowned upon the public discussion of medical subjects by its own members. It is to remedy this situation that the author has written this book.

The American Illustrated Medical Dictionary, including much collateral information of an encyclopedic character. By W. A. NEWMAN DORLAND, A.M., M.D. Third edition, revised and enlarged. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

Dorland's excellent medical dictionary we have previously reviewed at length. It appears now in its third edition, with such revisions as the short time intervening between the second edition and this have necessitated. The binding of flexible leather remains the same, and is to be commended.

A Thesaurus of Medical Words and Phrases. By WILFRED M. BARTON, M.D., and WALTER A. WELLS, M.D. pp. 534. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

A somewhat new departure in the way of medical books of reference appears in Barton and Wells' "Thesaurus of Medical Words and Phrases." The idea embodied in this unique book is to reverse the process of an ordinary dictionary and to attempt to supply a fitting term or phrase to express an idea when merely the meaning or idea is in the mind. We can easily see the value of such a plan, and can certainly commend the book to our readers. It also is bound in flexible red leather covers, and is most attractive in appearance.

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EYESTRAIN: AN OVERWORKED THEORY.

IN our issue of Oct. 1 we printed a brief editorial comment on the theory of eyestrain as a cause of various nervous affections, apropos of a paper which we had recently published from the pen of Dr. George M. Gould relative to the "Ill Health of Francis Parkman." Dr. Gould takes exception to our position, as may be seen by reference to his letter in our issue for Oct. 15. This we regret; we certainly had no intention of criticising our "guest" in any but the friendliest spirit, nor can we see in our well-meaning effort an "anomalous condition." We modestly reserve the right of comment on our contributors' productions, nor does the fact of allowing space in our columns commit us to agreement in any views which may be expressed.

We must, therefore, reiterate our opinion that Dr. Gould is an extremist in his advocacy of a theory which unquestionably stands on a basis of scientific fact. That eyestrain is causative of many distressing symptoms we gladly admit; that it is causative of so vast an array of affections as Dr. Gould maintains we as firmly deny. We regard Dr. Gould's method as scientific in that he has drawn renewed attention to and collected many facts bearing upon one important element in the production of certain nervous disorders; this service should be recognized and appreciated, and we are entirely ready to acknowledge that there is much practical utility in the theory. There are those who find truth in the uric acid theory, to which many of the ills of human life have been attributed. As a theory it has claim to scientific consideration, but its application in the hands of its advocates has at times gone quite beyond the bounds of scientific common sense. And so

of many another excellent medical theory. Dr. Gould must recognize that the worth of a theory and the manner of its advocacy are quite distinct. Darwinism, heredity, degeneracy, to mention but three, have all suffered grievously at the hands of their too ardent advocates, and we are forced to say that the eyestrain theory has similarly suffered from extreme claims.

Dr. Gould asks why we regard him as an extremist. We quote a few of his own statements in explanation. In his paper on "The Ill Health of Richard Wagner," he says:

> Wagner's clearest symptom was "sick headache;" migraine, megrim, hemicrania, nervous headache or bilious headache are other names for this terrible affection. It causes a large number of other symptoms, and is itself of an infinitely varied type, according to the kind of near-work required and the kind of organism of the patient. I have had thousands of patients with this disease, and ninety-nine out of one hundred were cured by spectacles alone.

No one who has had experience with migraine will deny that this is, at least, a radical statement, and one which, in the present state of our knowledge, could be made only by an extremist. And again:

> In Wagner's passport he is described as "wearing glasses." Outside of that simple statement no one ever seems to have seen him doing so, or spoken of the fact. Mr. Ellis has proof that seems to him pretty good that he did not wear them. It is of no consequence. Any spectacles he could get would not have neutralized his eyestrain. Were he living to-day he would in all probability not find any oculist or physician in Germany that would help him or care to help him in the one possible and effective way.

Such an arraignment of German physicians as a class does not savor of scientific fairness. The following remark also lacks the judicial quality:

> There is no greater cruelty, no greater crime against humanity, than this of non-recognition and scorn of eyestrain.

Writing of Jane Welsh Carlyle, he scores his professional brethren in the following words:

> The old physicians of forty years ago were excusable, perhaps, although we marvel to-day at their stupidity, At best they could say their parrotlike, everlasting "Take a trip to Italy or to Switzerland;" the silliest whispered "gingerbread," or twiddled their fingers. They had not yet learned the pompous pseudoscience that cries, "She is a neurotic, afflicted with climacteric melancholia, the victim of heredity, mental dyspepsia and masked insanity." The favorite word of this pseudoscience is *stigmata*. If it could only progress so little as to make the addition of a single letter to its lore! If it could only learn one-hundredth as much of *astigmatism* as it affects to know of *stigmatism*, less *stigma* would there be, and infinitely less suffering in the world! In the last twenty years any physician who does not know the true nature of such a case as that of Mrs. Carlyle and cure it instantly should be deprived of his medical degree.

This, also, we hold, transcends the limits of unprejudiced statement. We leave it to our readers to determine whether or not these excerpts from many which might be made are the language of an extremist.

As a matter of fact we have long been deeply interested in the theory of eyestrain as a causative factor in many nervous disorders. As Boston is smaller than Philadelphia, so our experience is, no doubt, smaller than Dr. Gould's, but such as it is, we confess again that it prohibits us from following him to the end of his theory. We are willing to go with him part way on his journey, but if we part from him before he has reached its end may we not, weighing all the facts, claim some justification for our timidity?

THE LEGAL STATUS OF FAITH HEALING.

A CONSIDERABLE amount of light has been thrown upon the mooted question of the relation of faith healing to the law by a recent decision of the New York State Court of Appeals. Within a few days a decision has been handed down in a case which has long been before the public, of the People *vs.* a man named Pierson, by profession a faith healer.

The original difficulty arose from the fact that in 1901 this Pierson treated by prayer an infant of sixteen months who was suffering from pneumonia. The child died; the incident became generally known; the legal authorities took the matter up; and Pierson was finally arrested and charged with a misdemeanor under a statute of the penal code which provides that a person is guilty of a misdemeanor who wilfully omits, among other things, to provide medical attendance for a minor.

At the trial of the case the prisoner admitted the facts, but contended that, inasmuch as he believed in healing by faith rather than by the art of medicine, he had not been guilty of wilful neglect. He, in the language of such people, failed to cure because "something was lacking in him." By such arguments it was attempted to exonerate the offender. He was, however, found guilty and sentenced to pay a fine. On legal technicalities the case was carried to a second court, which held that no criminal offence

under the statute had been proved. The prosecution then carried the case to the highest court in the state, whose decision we have already alluded to.

Without going into details regarding the final argument of Justice Haight of the Court of Appeals, which may be found elsewhere in this issue, it suffices to say that he held that liberty of religious profession and worship, which it is claimed had been infringed, could not be used as an argument for the defence, inasmuch as "acts which are not worship" fall within the jurisdiction of the penal code. By the construction of this final court it was held that the meaning of the statute was that minors could not legally be refused what is ordinarily understood as medical treatment on any ground whatsoever.

It was further stated that this decision does not apply to adults, who, if they desire, may refuse medical or any other aid in sickness or may call upon whomsoever they wish in the hope of relief. Naturally this decision makes no attack upon any special form of faith healing, whether it be known as Christian Science, Dowieism or any other of the subdivisions of this type of thought. It simply, in a common-sense way, deals with the law as originally enacted, and insists that the law must be maintained in individual cases.

It is said that this is the first decision of the sort which has been made in the United States by so high a Court, and it is generally conceded that the interpretation of the law is eminently just. What the outcome of this and other decisions, which are sure to follow, may be, we have no means of knowing, but we are strongly of the conviction that the final reasonableness and common sense of the people, as expressed in their courts of law, will ultimately lead to a proper appreciation of the limits of these irregular types of healing, and that the agitation which now periodically appears will gradually subside as the courts, and particularly the higher courts, are called upon more and more for a final expression of legal opinion.

THE BOSTON DISPENSARY.

THE annual meeting of the managers of the Boston Dispensary has recently been held, and the reports indicate a year in the work of the institution of unusual efficiency. There were treated during the year at the dispensary in the various departments upwards of 29,000 new patients, and in the districts under the general jurisdiction of the dispensary upwards of 11,000 new patients. It was furthermore stated that since the establishment of the institution in 1796 more than one and a half million persons have been treated, certainly an excellent record of work accomplished.

We have from time to time commented on the part played by this dispensary in the medical work of the city. Situated as it is in a crowded region, it forms the center of a large amount of medical work, and, furthermore, as is generally known, extends the scope if its usefulness by an admirable system of medical districts under the charge of young physicians and experienced nurses. This system, which has been elaborated to a very considerable degree, is not only eminently useful to the persons treated, but is also of the greatest value as a perfectly legitimate training school for many of our best younger medical men. There are at present thirteen of these district physicians, whose fields extend now over large portions of the city. Many of the physicians associated with the dispensary are also teachers in one or another of our medical schools, and the value of the institution as a place for teaching has certainly grown year by year. Unfortunately, like all successful enterprises, the work of the institution has expanded beyond the capacities of the buildings up to this time provided.

It will be remembered that not many years ago an extensive addition was made, but now again it is felt that the work is being seriously hampered by lack of adequate space and equipment. The expense of conducting a modern hospital is usually not properly appreciated by the general public. While it is perfectly evident that in certain cases unnecessary expenditure is made for internal fittings, it is nevertheless true that with our increasing knowledge and increasingly diversified methods of treatment, new apparatus and new arrangements of rooms are constantly required to fulfill the completest modern demand. The Boston Dispensary apparently finds itself in this position, and needs at least $65,000 for the enlargement of its facilities. Experience in Boston would lead one to the assurance that this amount of money will be forthcoming for so worthy an object. The dispensary, with its excellent record of more than one hundred years, will certainly not be allowed to lapse or in any way curtail its usefulness.

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 21, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 67, scarlatina 24, typhoid fever 27, measles 56, smallpox 0.

Bequests to Hospitals.—By the will of the late Dr. George Haven of Boston, the Harvard Medical School receives $25,000 and a share in a residue to become available on the death of certain relatives. The Lying-In Hospital of Boston receives all books and instruments, together with a bequest of $20,000, and ultimately shares equally with the Harvard Medical School in the residue.

Additions to Perkins Institution for the Blind. — After a considerable delay work on necessary additions to this well-known institution were begun last spring, and the new building is now practically completed. The new section is four stories high and commodious. It will add very much to the efficiency of an institution which has long held an enviable place in its work for the blind.

Diphtheria.— A somewhat exaggerated report has apparently been spread abroad of the dangerous prevalence of diphtheria in certain regions of the city. The facts show that the total number of cases in the entire city is but very little above what it was during the same period last year, and does not equal what it has been in several previous years. Every precaution has been taken to insure the health of school children, so that nothing approaching an epidemic is to apprehended.

The Opening of a Ward for Skin Diseases at the Massachusetts General Hospital. — Proper special hospital facilities for the treatment of patients suffering from cutaneous affections that confine them to their beds, or prevent them from following their usual occupations, have not hitherto existed in Boston or New England. By the gift of Dr. Charles G. Weld a very complete ward has been added to the Massachusetts General Hospital, especially built and equipped for the care of cutaneous cases, to be under the charge of the dermatologists on the staff of the hospital. The ward contains twenty beds in separate rooms, the male and female patients being quartered at either end, a wide open space occupying the center. Special arrangements for baths and other features necessary for the treatment of skin diseases have been added. Of the twenty beds in the ward, four have been reserved for the use of the departments of the nervous system and of the throat and nose, thus giving to all of the special out-patient departments a certain representation in the wards.

NEW YORK.

Unlawful Practice of Medicine. — At a meeting of the Society of Medical Jurisprudence held Oct. 12, Justice Julius M. Mayer read a paper on "Criminal Procedure against the Unlawful Practice of Medicine." He reviewed the subject from the standpoint of a justice of the Court of Special Sessions, where cases of alleged unlawful practice are tried, and among his conclusions were: That a statute should be enacted defining more clearly what is the "practice of medicine," that there should be no minimum punishment provided in the law; and that some method should be devised to prevent the newspapers from publishing the advertisements of palmists and clairvoyants, whose real occupation is the practice of medicine illegally. In speaking on the latter point he said: "The worst agency in New York to-day that helps the man who sells either real or pretended abortion medicine is the newspapers, for they make it possible to ensnare the unwary, the superstitious and the fearful. I suggest that in the new school of journalism at Columbia there be a chair of advertising, and let it be taught to the young men of the newspaper profession that the first duty of a great newspaper is to censor its medical advertising. Many persons who advertise as palmists and clairvoyants advertise simply to cover the giving of medicines of the kind I have mentioned."

A Legal Decision on Faith Healing. — It is a gratifying fact that just on the eve of the descent upon wicked New York of "Elijah" Dowie and the cohorts of Zion, the Court of Appeals handed down its decision in the case of People *v.* Pierson, declaring dependence upon faith healing to be criminal negligence. J. Luther Pierson, a follower of Dowie, living at White Plains, Westchester County, early in 1901 was sentenced to $500 fine or 500 days' imprisonment for criminal neglect in failing to provide medical attendance for his adopted daughter, an infant of sixteen months, who died from pneumonia. The conviction was secured under the penal code, which states that "a person who omits without lawful excuse to perform a duty

by law imposed upon him, to furnish food, clothing, shelter or medical attendance to a minor, is guilty," etc. The conviction was reversed by the Appellate Division of the Supreme Court, Justice Goodrich of Brooklyn dissenting. Justice Bartlett, in the prevailing opinion, held that the "medical attendance referred to in the statute does not mean exclusively the attendance of a medical practitioner in the generally accepted sense of that term. The case was then carried to the Court of Appeals, and in rendering the decision of this highest court Judge Haight says: "It would seem that the legislative intent is reasonably clear, although possibly more precise language could have been employed. The section of the code under which the indictment was found contemplates that there are persons upon whom the law casts a duty of caring for minors. . . . Sitting as a court of law for the purpose of construing and determining the meaning of statutes, we have nothing to do with variances in religious belief, and have no power to determine which is correct. We place no limitations upon the power of the mind over the body, the power of faith to dispel disease, or the power of the Supreme Being to heal the sick. We merely declare the law as given us by the legislature. We find no error on the part of the trial court that called for a reversal." District Attorney J. Addison Brown of Westchester County, in commenting on this decision, stated that as far as he knew — and he had carefully investigated the matter — this is the first time in the history of New York or any other state where the law has been made certain by the decision of the higher courts. The higher courts of England have upheld convictions in similar cases, the prisoners there being found guilty of manslaughter. "The decision," he said, "is of the highest importance, and means absolutely that these faith curists and others of the same sort must obey the law compelling them to call in regular physicians in the event of dangerous illness of minors in their families. The fact that they have called in 'readers' of their churches, layers-on-of-hands and others will not shield them from the law." Referring to the case of John Carroll Lathrop, the reader of one of the Eddyite churches in New York, the attendant of the Quimby child at White Plains who died of diphtheria, Mr. Brown said: "It would seem in the light of the decision that his trial would be brought up very soon before County Judge Platt. Counsel demurred in this case eight months ago, and it is possible that the judge delayed the trial until he could hear the decision of the Court of Appeals." Lathrop was indicted by the Grand Jury at White Plains on a charge of manslaughter.

Miscellany.

THE PROTECTIVE EFFECT OF ANTITYPHOID INOCULATION.

DR. A. E. WRIGHT, late professor of pathology at the Netley Army Medical School, contributes further statistical records, supplementary to those previously offered by him, in regard to the protective effect of antityphoid inoculation.

One statement (Table I) refers to the incidence of typhoid fever and the death-rate from the disease in the inoculated and uninoculated soldiers in India during the year 1901:

TABLE I.

	Average Strength During Year	Cases of Typhoid Fever	Deaths from Typhoid Fever	Incidence Rate Per cent	Death-Rate Per cent
Uninoculated	55,955	744	199	1.33	0.36
Inoculated	4,883	32	3	0.66	0.06

The incidence rate was reduced one-half and the death rate five-sixths by antityphoid inoculation, according to these returns made to the war office.

The second statement (Table II) gives the incidence rate among a column of troops during a limited period of three months (December, 1899–March, 1900) of the South African War:

TABLE II.

	Number Cases of Typhoid Fever	Incidence Rate
Uninoculated	10,981	2.3%
Inoculated	2,535	1.0%

The incidence rate was reduced more than one-half.

The first table, as interpretated by Dr. Wright, who is personally familiar with the inoculation work in India, suggests that the protective effect of inoculation continues for a minimum of three years.

IS REGISTRATION AND DISINFECTION A SUCCESSFUL METHOD OF COMBATING PULMONARY CONSUMPTION?

IN a paper read before the York meeting of the Pennsylvaina State Medical Society, Sept. 23, 1903, and published in the *New York Medical Journal*, Sept. 26, 1903, on the death-rate of acute pneumonia, Dr. Thomas J. Mays of Philadelphia expresses surprise to find that instead of decreasing, consumption has increased in most of our large cities during the last five years. This has led to an inquiry whether registration and disinfection of consumption in vogue in many of our cities are as efficient in "wiping out" this disease as we have been led to believe. In order to throw light upon this question he collected data showing the death-rate of consumption and pneumonia in twenty large cities and two prominent states, namely, Philadelphia, New York, Chicago, Boston,

St. Louis, Buffalo, Washington, D. C., New Orleans, Richmond, Baltimore, Louisville, Reading, Milwaukee, Hartford, New Haven, Cleveland, Haverhill, Worcester, Cincinnati, Indianapolis, and New Jersey and Rhode Island, representing a total of nearly thirteen million inhabitants, or about one-sixth of the entire population of the United States. These statistics are arranged in twenty-five charts, and in many instances cover a period of thirty years.

One of the striking characteristics of these charts is that the consumption tracing pursues a general descending course, while that of pneumonia rises in most instances. Another one is that during the last five years consumption increased in Philadelphia, Boston, St. Louis, Buffalo, Washington, Rhode Island, New Jersey, New Orleans, Richmond, Baltimore, Louisville, Reading, Milwaukee, New Haven, Cincinnati and Indianapolis; and decreased during the same time in New York, Chicago, Hartford, Cleveland, Haverhill and Worcester, the total increase being 184.71% and the total decrease 38.86%, leaving a net increase of 145.87% in these localities.

On examination of the charts it will be found that with perhaps one or two exceptions they may be divided into two classes; namely (1) those in which the phthisis and pneumonia tracings touch or cross each other during the last ten years, as is the case with Philadelphia, New York, Chicago, Boston, Buffalo, Baltimore, Hartford, New Haven, Cleveland, Worcester and New Jersey, and (2) those in which the same tracings remain apart a good distance, the latter below the former, as is true of St. Louis, District of Columbia, New Orleans, Richmond, Reading, Milwaukee, Haverhill, Indianapolis and Rhode Island.

Now on investigation, it turns out that in all the localities of the first class, registration and disinfection of consumption are enforced, or these subjects are or have been largely agitated; while in the localities of the second class these measures receive no consideration whatever. If we compare the death-rate of phthisis and pneumonia for the whole period between the first class, or prevention localities, and the second class, or non-prevention localities, it will be seen that the decrease of phthisis is about 1,000% greater in the prevention than it is in the non-prevention localities; while on the contrary pneumonia increased over 600% in the former over the latter localities.

Now what is the interpretation of these figures? How can the difference in the death-rate of pneumonia be accounted for between these localities which practice prevention and those which do not? Is this mere chance, or is it coincidence, or a connection between cause and effect? Without inquiring into the specific nature of this relationship, if any exists, it is enough to know that the pronounced decrease of phthisis in the prevention localities is largely supplemented by the excessive rise in the pneumonia rate in the same. Indeed it seems as if from the early nineties until the end the phthisis and pneumonia lines had become confounded in many of the prevention localities, and as if a certain large proportion of deaths had been deducted from the former and bodily transferred to the latter.

It might be asserted that the greater decrease of phthisis in the prevention over the non-prevention localities during the last ten years is direct proof of the efficacy of disinfection measures. Standing by itself it might be regarded as such, but when taken in connection in the first place with the simultaneous enormous rise of the pneumonia column in the same localities and in the second place with the fact that no rise but even a decline occurred in the pneumonia rate of the non-prevention localities, it will be seen that its force as such is greatly impaired. It is perfectly clear that the decrease of phthisis is intimately interlinked with the increase of pneumonia, and it is very probable that both of these phenomena are dependent on the influence of registration and disinfection, because in localities like New York and Boston, in which these measures have been carried out most effectually and for the longest periods, the death-rate of pneumonia attains by far the highest average during the last ten years.

Now when we reflect that all the prevention localities, with possibly one exception, may be recognized by a high pneumonia death-rate; that the decrease of phthisis in the same localities is largely supplemented by a marked rise in the pneumonia rate; and that in eight out of the thirteen prevention localities, there has been a total increase of 88% of phthisis during the last five years, it is sufficient proof to show that registration and disinfection have not thus far shown themselves a success in the "wiping out" process of consumption.

Correspondence.

ETHER.

Boston, Oct. 16, 1903.

Mr. Editor: In connection with the opening of the new Out-Patient Department of the Massachusetts General Hospital which occurred to-day and has been called "Ether Day," I am reminded of the account of the first exhibition of ether as an anesthetic for surgical purposes in Great Britain. The first use of ether in Boston, and the announcement of its wonderful effect in relieving pain which was thus made to the world, was followed by a speedy trial of its properties there. The account of the first operation performed by Mr. Liston was written by Mr. William Cadge (F.R.C.S.), England, and appeared in the *British Medical Journal* of Oct. 17, 1896, almost exactly fifty years after the first demonstration of anesthesia in Boston, Oct. 16, 1846.

Mr. Cadge died recently, and in an extended obituary notice an allusion is made to the fact that he was probably the last survivor among those persons who witnessed the introduction of painless surgery into British practice. Under the caption, "The First Operation under an Anesthetic in this Country," an abstract of the former paper is included (*British Medical Journal*, July 4, 1903, p. 54). In both articles the credit of the first *information* concerning the anesthetic properties of ether is unrestrictedly given to "Dr. Bigelow of Boston," who had sent "definite and authentic information" to Dr. Boott of Gower Street in December, 1846. * * *

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 10, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,136	370	27.99	11.18	3.26	8.80	1.67
Chicago . . .	1,885,000	427	131	28.57	8.66	3.75	10.73	1.17
Philadelphia	1,378,327	395	96	22.32	7.34	2.78	11.64	2.28
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	183	47	24.04	8.20	—	4.37	2.73
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	120	43	28.32	15.00	2.50	8.33	3.33
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee . .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	69	24	23.18	11.59	1.44	8.69	—
Boston . . .	603,163	188	67	28.19	10.10	3.72	9.57	1.06
Worcester . .	132,044	33	9	9.09	9.09	—	9.09	—
Fall River . .	115,549	40	10	50.00	7.50	—	20.00	5 00
Lowell . . .	101,959	33	11	21.21	15.15	—	15.15	—
Cambridge .	98,639	34	13	29.41	5.88	—	11.76	—
Lynn	72,497	22	11	18.18	—	4.54	—	—
Lawrence . .	69,766	23	10	21.74	21.74	4.35	8.70	—
Springfield .	69,389	11	1	27.27	—	9.09	—	—
Somerville .	68,110	30	6	25.00	—	—	—	5.00
New Bedford	67,198	29	12	48.27	10.34	3.45	24.14	6.90
Holyoke . . .	49,286	11	4	18.18	9.09	—	9.09	—
Brockton . .	44,873	6	3	—	—	—	—	—
Haverhill . .	42,104	2	1	—	50.00	—	—	—
Newton . . .	37,794	7	1	—	—	—	—	—
Salem	36,876	17	9	29.41	—	—	23.53	—
Malden . . .	36,286	12	2	16.67	—	—	—	—
Chelsea . . .	35,876	11	5	36.36	—	—	18.18	—
Fitchburg . .	35,069	3	1	—	—	—	—	—
Taunton . . .	33,656	15	5	46.66	13.33	—	20.00	—
Everett . . .	28,620	5	4	20.00	—	20.00	—	—
North Adams .	27,862	6	—	16.67	—	—	—	16.67
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	10	3	30.00	—	—	10.00	—
Waltham . .	25,198	4	1	75.00	—	—	—	—
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,589	4	1	50.00	—	—	—	—
Chicopee . .	21,031	4	3	25.00	—	—	—	—
Medford . . .	20,962	4	1	25.00	25.00	—	—	—
Northampton	19,883	5	2	—	—	—	—	—
Beverly . . .	15,302	4	1	—	—	—	—	—
Clinton . . .	15,161	6	2	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	6	3	33.33	—	—	16.67	—
Woburn . . .	14,300	10	—	40.00	—	—	20.00	—
Hyde Park .	14,175	6	2	33.33	—	—	—	—
Adams . . .	13,745	1	—	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	6	2	16.67	—	—	16.67	—
Melrose . . .	13,600	2	2	—	50.00	—	—	—
Westfield . .	13,418	5	3	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,723	2	1	—	—	—	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	1	—	—	—	—	—	—
Weymouth .	11,344	7	2	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	4	1	50.00	—	—	—	—
Plymouth . .	10,780	—	—	—	—	—	—	—

Deaths reported, 2,949; under five years of age, 926; principal infectious diseases (smallpox, measles, scarlet fever, cerebro-spinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 890, acute lung diseases 281, consumption 336, scarlet fever 21, whooping cough 14, cerebro-spinal meningitis 10, smallpox 11, erysipelas 3, puerperal fever 7, measles 6, typhoid fever 50, diarrheal diseases 252, diphtheria and croup 80.

From whooping cough, New York 5, Baltimore 1, Pittsburg 1, Cambridge 2, Boston. Fall River, New Bedford, Chicopee and Hyde Park 1 each. From erysipelas, Chicago 1, Philadelphia 1, Providence 1. From smallpox, Philadelphia 3, Baltimore 1, Pittsburg 7. From measles, New York 4, Philadelphia 2. From scarlet fever, New York 6, Chicago 5, Philadelphia 2, Baltimore 3, Pittsburg 1, Boston 1, New Bedford 3.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Sept. 26 the death-rate was 16.3. Deaths reported, 4,707; acute diseases of the respiratory organs (London) 134, whooping cough 57, diphtheria 54, measles 23, smallpox 3, scarlet fever 40.

The death-rate ranged from 5.3 in Hornsey to 24.7 in Merthyr Tydfil; London 15.4, West Ham 14.6, Brighton 14.1, Portsmouth 19.3, Southampton 15.2, Plymouth 15.4, Bristol 14.6, Birmingham 18.2, Leicester 14.2, Nottingham 14.6, Bolton 17.1, Manchester 19.4, Salford 20.3, Bradford 13.6, Leeds 16.1, Hull 23.2, Newcastle-on-Tyne 21.4, Cardiff 14.8, Rhondda 13.5, Liverpool 20.9, Handsworth 8.2, Middlesbrough 22.5.

METEOROLOGICAL RECORD.

For the week ending Oct. 10, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S.. 4	30.30	58	70	46	80	81	80	S E	S	5	12	C.	F.	0
M.. 5	30.12	68	74	61	84	91	88	S W	S W	0	7	O.	O.	.20
T.. 6	30.24	62	68	58	78	88	83	N	S E	12	7	O.	C.	0
W.. 7	30.27	58	60	56	83	96	90	E	E	8	12	O.	R.	T.
T.. 8	29.99	60	65	56	97	89	93	S E	S E	10	16	R.	O.	.23
F.. 9	29.92	56	58	55	88	85	86	E	E	12	21	O.	O.	.10
S.. 10	30.08	52	54	50	84	87	86	N E	N E	27	25	R.	O.	.37
☞	30.13		64	55			77							.90

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING OCT. 17, 1903.

C. H. DELANCY, assistant surgeon. Detached from the "Hancock" and ordered to the "Petrel."

R. K. MCCLANAHAN, assistant surgeon. Detached from treatment at the Naval Hospital, Mare Island, Cal., ordered home and three months' sick leave.

S. W. DOUGLASS, pharmacist. Detached from the Navy Yard, Portsmouth, N. H., and ordered to the Naval Magazine, Iona Island, N. Y.

W. F. ARNOLD, surgeon. Detached from treatment at Naval Hospital, Mare Island, ordered home with three months' sick leave.

W. R. DUBOSE, medical inspector. Commissioned medical inspector with the rank of commander from June 20, 1903.

D. H. MORGAN, passed assistant surgeon. When discharged from Naval Hospital Mare Island, granted sick leave for three months.

C. H. DELANCY, passed assistant surgeon. Commissioned a passed assistant surgeon, with rank of Lieutenant, from June 7, 1903.

SOCIETY NOTICES.

FIRST MASSACHUSETTS STATE CONFERENCE OF CHARITIES. — Meetings of this Conference will be held in Boston, in Huntington Hall, Massachusetts Institute of Technology, Nov. 4, 5 and 6, 1903.

NATIONAL ASSOCIATION FOR STUDY OF EPILEPSY. — The National Association for the Study of Epilepsy will hold its third annual meeting in the Hall of the College of Physicians in Philadelphia on the afternoon and evening of Nov. 5. The program includes, papers by Drs. Wharton Sinkler, Everett Flood, Wm. N. Bullard, H. M. Weeks, Charles K. Mills, A. H. Halberstadt, J. Chalmers DaCosta, John C. Munro, L. Pierce Clark and W. P. Spratling. The Association extends a cordial invitation to all persons interested in charity, and especially in the care and treatment of epileptics, to attend its annual meetings.

RECENT DEATH.

JEAN F. CHAUVEAU, M.D., one of the best-known French physicians in New York City, died on Oct. 17. He belonged to a French-Swiss family and was graduated at Geneva in 1853. He had practiced in New York for many years, and until compelled by poor health to retire was a visiting physician to a French Hospital there. His son the Dr. Jean F. Chauveau, Jr., a graduate of the College of Physicians and Surgeons, New York, in 1891, was associated with him in practice.

BOOKS AND PAMPHLETS RECEIVED.

The Practical Medicine Series of Year Books, comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued monthly, under the general Editorial Charge of Gustavus P. Head, M. D. Vol. X. Chicago: The Year Book Publishers. September, 1903.

Introduction to the Study of Malarial Diseases. By Dr. Reinhold Ruge. Translated by P. Edgar, M.B., C.M. (Edin.) and M. Eden Paul, M.D. (Brux.), M. R. C. S., L. R. C. P. Illustrated London and New York: Rebman Company. 1903.

Address.

THE RELATION OF LABORATORY RESEARCH TO THE GENERAL PRACTITIONER OF MEDICINE.[1]

HORACE D. ARNOLD M.D., BOSTON,

Professor of Clinical Medicine, Tufts College Medical School; Assistant Visiting Physician, Boston City Hospital.

THE recent passing of the century mark has given medical addresses of the past few years a retrospective aspect. It has been an appropriate and opportune time to review the progress of Medicine. As viewed in the large perspective of a century, that progress has been truly wonderful. The advance in one hundred years, or even in fifty years, was greater than that of the whole previous history of Medicine. Toward the end of the century the rate of progress increased until it was well-nigh impossible for a single mind to keep in touch with even the important advances being made along the whole line of medical investigation.

The improvements in the microscope in this period made possible a study of the minute structure of the tissues of the body. About the middle of the century originated the conception of the cell as the unit in the structure of each organ, and hence the unit of organic life itself.

Anatomy advanced by the development of microscopical anatomy, or histology. Pathology advanced by bounds with the study of the changes in the individual cells and groups of cells in disease. The discovery of bacteria and their relation to disease became possible. We not only developed a new branch of medical science,— bacteriology,— but the application of the knowledge thus obtained made possible the remarkable advances in modern surgery, and threw new light on and profoundly modified our conceptions of infectious diseases.

The study of the functions of the individual cells has added much to physiology. Even more is due to animal experimentation. But the problems of physiology and of disease have also shown the need of study of the chemical changes occurring in the body. Many important advances have already been made along this line, and much more important developments are to be looked for in the near future, based on the researches of the chemical laboratory.

I have briefly rehearsed some of these well-known facts that we may clearly appreciate that the advance in Medicine of which we are all so justly proud is chiefly due to laboratory research — using the term in a broad sense. The debt which the medical profession and which humanity owes to these skilled and tireless workers in the laboratory can never be fully repaid. They are the leaders in the advance which is being made in our warfare against disease, and as such we should give them due meed of honor.

What I wish to particularly consider to-day, however, is not the extent of the advances thus made in Medicine, but the question of how far the general practitioner is applying these improvements in his battle with disease. Medical advance is to be measured not alone by the attainments of the generals of the medical army, but by the efficiency of the rank and file. As we found in our recent war, the "man behind the gun" is a very important factor.

Is our medical private — the general practitioner — equipped with the best form of rifle? Is he using the modern smokeless powder? Or does he obscure his view of the enemy with an opaque cloud from his obsolete ammunition? Has he had sufficient drill in the use of his arms and ammunition to make his aim reliable and accurate? Better give us a sharp-shooter armed with a muzzle loader and black powder, than a man who has an up-to-date equipment but has no skill in its use!

My answer is that the medical army is a motley assemblage; that it is lacking in organization and consequently lacking in the most effective coöperation of the different branches of the service; that the equipment of the individual (both in arms and ammunition) varies from the most modern to the very obsolete; and that the training of the individual in the use of his equipment varies widely and generally needs improvement.

The personnel of this medical army is, however, excellent. The individual soldier is courageous, animated by high motives, self-sacrificing and earnest in his work. Often, by the intelligent and resourceful application of available means to the problem in hand, he does much to make up for the deficiencies in his equipment and training. The results obtained by the profession are on the whole good. The essential point I wish to make is that the results might be better.

We may improve by a wider application in general practice of the knowledge furnished by the laboratory worker; by adopting his more scientific methods of investigation in the clinical study of disease; and by a more cordial coöperation between the laboratory worker and the practicing physician in the study and cure of disease.

Some, perhaps much, progress has already been made in this direction. It is because this progress must depend on the effort of the individual physician that this question is worthy of our consideration on such an occasion as this, when by common consent a body of general practitioners pause at the end of a year's work as a society to cast a broad look over the whole field of medical progress.

That the advances made by the laboratory workers have not been fully utilized is not entirely the fault of the medical practitioners. The fault lies partly with the laboratory workers themselves. Having frankly acknowledged our deep indebtedness to these investigators, it is our right to criticize them and to point out how their discoveries may, by better coöperation with us, be made more available for the benefit of humanity. For after all, the benefit of humanity

[1] Annual Oration before the Norfolk District Society of the Massachusetts Medical Society, delivered May 12, 1903.

is the ultimate goal at which the medical profession aims, and it is right to measure the work of any member of the profession by the degree to which he attains this goal, directly or indirectly.

It is always well to look facts squarely in the face, and not to ignore their existence because their contemplation is not entirely pleasant. In this connection it is an unpleasant fact that there is too often a lack of sympathy and frequently, even, a feeling of hostility between the laboratory worker and the general practitioner. The latter criticizes the laboratory worker as being "too scientific," as carried away by the pure spirit of investigation and not caring for the practical result of his work. He considers the laboratory worker impractical because so much of his investigation has no immediate application in the treatment of disease.

The laboratory worker replies that his work cannot be judged by any such standard; that science should be pursued for itself, being a search after truth, and must not be judged by its utility. He further points properly to the fact that many important advances in medicine have been based on scientific facts thus discovered which at first seemed to have absolutely no bearing on the practical problems of Medicine. The great need of Medicine has been and still is, a scientific foundation. To the taunt that he is unpractical he retorts that the medical practitioner is unscientific; that his observations are carelessly made; and that the practice of medicine based on such observations is empirical and unreliable.

Both sides in this controversy are partly right and partly wrong. We must admit that the condemnation by the laboratory investigator applies justly to many of us who are practicing medicine. Perhaps it is as well for our self-esteem and for the reputation of the profession that we should not try to learn too accurately to how many it does apply. But, admitting this, it is equally true that many of the laboratory workers are so lost in the scientific side of their investigation that they apparently forget any question of its practical value. Some even glory in the fact that it has no apparent practical value. These are impatient of any questions as to the utility of these very interesting observations, and are annoyed by the efforts of physicians who try to garner from these riches something which they may carry as a gift to the sick. Such extreme instances are few, but they make a bad impression.

I know that in general the laboratory worker is more willing to welcome the practitioner in his realm than the physician generally supposes, and is more patient and courteous in such reception than we have just reason to expect. It is hard for him, however, not to show a certain feeling of toleration rather than interest, when the utility of a given point is examined.

Notwithstanding appearances, the laboratory workers are at heart just as earnest in their desire to benefit humanity as any memebrs of the profession. The more the pity, then, if they become so engrossed in their studies that they forget the necessity of occasionally summarizing their work, and of interpreting it so that the average medical mind can grasp its significance. This they certainly neglect to do.

It is not enough to make the studies. It is not enough to publish the results in their technical form. If the general practitioner is to make use of this information, somebody must translate it into terms which he can thoroughly understand, and this process of interpretation should be begun by the laboratory workers themselves. Such action on their part will not only bring their work to better fruition, but will remove from the mind of the general practitioner the unjust feeling that the laboratory worker is indifferent to the ultimate practical application of his discoveries.

The first step, then, toward the better utilization of scientific medical facts is for the discoverers of those facts to put them in a form in which they may be digested and assimilated by the medical body as a whole, and let them remember that its digestive powers are weak and that it needs simple nutriment.

But if some of the blame for the present condition of medical practice lies with the laboratory workers, much more — and the greater part — lies at our own door. Granted that much of the output of the laboratories has no immediate application in the practice of Medicine; granted that much of it needs interpretation before we can comprehend its utility, we, medical practitioners, are not yet using our best endeavors to apply that part of the scientific discoveries which has a manifest application in the diagnosis and treatment of disease. Until we do this we fully deserve the criticism of the scientific investigators, and we, the greater sinners, have little right to criticize them.

We have criticized them as too little interested in the benefit of humanity. Are we true to this aim? Alas, many are not! How many, I dare not estimate. And the worst of it is that it is not the zealous pursuit of truth that distracts our attention, but the zealous pursuit of the dollar!

Commercialism, the pursuit of medicine as a trade, explains altogether too much of the indifference of a large number of medical practitioners to the scientific advances of medicine. So long as these traders are a little ahead of the laity and can impress upon them an acknowledgment of their superiority and thus get a good financial return, they care nothing for the advance of medical science. You cannot reach such men by appeals based on the ideals of the profession. The only practical way to reach them is to educate the public. When the public knows enough to see that they are poorly equipped, they will be driven in self-defence to increase their equipment.

To you, members of the Massachusetts Medical Society, this does not apply. You are actuated by higher motives than the pursuit of medicine as a trade. And yet even with us the question

of the financial return to be made from scientific medicine must be considered.

We cannot, then, dismiss this aspect of the application of scientific medicine with a condemnation of commercialism. Actuated, as we are, by high ideals of the profession, we are yet dependent on the practice of Medicine for our financial support. Whatever our duty to humanity, I believe we have an equal or higher duty to our own families, and perhaps to ourselves. We have a right to consider how this question affects our pocket books without being accused of having a sordid aim in so doing. I shall devote some time to the consideration of this topic, because it has a very practical bearing, and because I believe there is a general hesitancy among physicians about adopting such methods because they think they cannot afford the time or money for it.

I have heard the objection urged that the people cannot or will not pay more for this extra work, and that the doctor cannot afford the time for it without recompense. Both assertions are, I believe, wrong.

If our patients actually cannot afford to pay us for this work, it is still our duty to perform it when it will be an essential aid to the diagnosis or treatment of the disease. In treating a needy patient, our only right question should be, Is it necessary? If so, it is our duty to do it. If we are unwilling to give a charity case the essential treatment, we should withdraw from the case. There are in our neighborhood charitable institutions, if not charitable doctors, who will do it.

If the case is not one of absolute charity, but one that can make only a poor return for whatever we do, still the same rule applies. Only we are even more culpable if we take from such patients the best they can afford to give, and do not in return do our best in treating them.

But the important class of patients are those who pay their bills, who make no objection to paying the customary fees for the ordinary medical attendance, but do object to paying more for extra investigations made by their regular attendant. The doctor, knowing their feelings, is reluctant to charge for such work, fearing they may take offence and that he may loose good-paying patients. On the other hand, he objects to doing this extra work free of charge for patients who ought to pay.

If the examination is essential in these cases, it should be made. The doctor should make a reasonable charge for such work, and I believe it can be done not only without losing these patients, but with added respect for his reputation. The necessity or utility of the examination must be explained to the patient, and the fact that it takes time and requires skill. Then he will understand that it is service of value to him and will be willing to pay.

In other words, many doctors are afraid to do the work and charge for it in the present mental attitude of the public. The remedy lies in educating the public to know that such researches are valuable. Then they will not only pay for them, but will demand them.

Some care is necessary, however, in deciding when to recommend such measures. If such investigation is really essential, we should not hesitate to urge it. It is, of course, the patient's privilege to refuse to follow our advice in this respect as in all others, but that should not affect the nature of the advice given. But if the investigation is not essential, but only desirable, then we should take the patient's pocket book into consideration. We should not cause him extra expense merely because the investigation would be of interest to us. In many such cases we would perform the tests and count the resulting satisfaction a sufficient recompense.

I am very far from urging that laboratory investigations ought to be inaugurated in all our cases. That is very well in the hospital, which is, as it were, a laboratory for the complete study of disease; and the more complete the investigation, the more reliable are the results. Such investigations as do not injure the patients are only a fair return for the benefits gratuitously received by them from the institution. Moreover, they are directly benefited by the results of these investigations.

In private practice, however, the relation of the patient to the physician is an entirely voluntary one. His wishes must be consulted. We may offer him certain opportunities, but he may decline them if he chooses. It is not fair to criticize the work of the general practitioner because it is not always done with all the thoroughness of hospital work. For he is handicapped by the fact that the public often fails to appreciate the necessity or the advisability of such measures.

Suppose a patient comes to us with an apparently slight gastric disturbance. We could perhaps prescribe with more certainty if we investigated the exact condition of his gastric juice and his power of digestion. Perchance the investigation of the stomach contents might reveal the existence of trouble of unsuspected gravity. But can you blame the patient if he prefers first to try such remedies as your skill would suggest, even if the diagnosis is not perfectly clear? Would not you, in his place, try the remedies first, instead of at once embracing the opportunity to swallow the stomach tube? If the symptoms are grave, if serious trouble is suspected, or if the remedies fail to relieve, that is another matter. But the routine use of the stomach tube is not practicable for the treatment of every case of gastric disturbance, whatever may be the scientific aspect of such cases.

This is but an illustration of the general principle that in private practice the patient has the right to determine how far he cares to avail himself of the opportunities offered by medical science. Provided the investigation we have in mind is not absolutely assential for his welfare, we should do the best we can with the limited means he puts at our disposal. It is part of the art of the practice of medicine to decide when it

is wise to urge, and when it is wise not to mention the measures that the theory of scientific medicine suggests. Except where such measures are essential, the successful physician is properly a practitioner of the art of medicine first, and secondly a scientific investigator.

Before leaving the consideration of the financial aspect of laboratory investigation, I wish to say a word about the indirect benefit that may be derived from such work, even though it may bring no immediate money return. It is not so unusual to find the ordinary practitioner contrasting his lot with that of the more successful man who has hospital or other large clinical opportunities. Not that these men are always the most successful financially in practice, but in general the experience gained by such work is a valuable asset in winning financial success. The less succesful man is apt to overlook the fact that such experience is gained only by the expenditure of much time and energy in gratuitous service. Is he willing to make the same sacrifice? Does he make the best use of similar opportunities that lie at his hand? If, instead of refusing to do scientific work in his practice when it cannot be paid for, he accepts all such opportunities for the sake of the experience he may gain, — I do not say that he can equal the improvement gained at the hospital, with its greater opportunities, but at the expenditure of much less time he may add materially to his own experience and ability, and he can to an important degree acquire that asset for successful practice which he envies in the hospital physician. Thus not only consideration of our duty, but self-interest, should lead the general practitioner to a much wider application of laboratory methods than is now the case.

An indirect benefit, but one of great imporance, attends the use of the laboratory methods of examination, in that it tends to make our clinical examination of the patient more careful and accurate. The mere consideration of whether such a test is desirable means a careful analysis of the symptoms of the case. We cannot do this laboratory work successfully without methods of precision and intelligent thought, and we return to the clinical side of the case with keener mental faculties as well as with facts that aid in diagnosis. Thus the thoroughness and accuracy necessary in laboratory technique lead to better methods in the ordinary clinical examination and study of cases.

What may we reasonably expect of the general practitioner in the way of laboratory work in connection with his practice? Certainly not a fully equipped laboratory, nor the ability or time for exhaustive researches. But we may expect the possession of a suitable microscope, and those simpler forms of laboratory apparatus and the reagents that are required for the practical clinical tests, and the ability to apply these tests with sufficient accuracy to be of value as an aid to diagnosis. The equipment is not prohibitive in cost, and if properly utilized will bring fully as good a financial return as many forms of equipment that the general practitioner willingly makes. The skill required in making these examinations is within the reach of any medical man of average ability.

One reason why the general practitioners have not more generally adopted these methods is, I believe, that the teaching of these subjects in medical schools has been unnecessarily complicated from the physician's point of view. In teaching medical students we must aim not only at showing them these practical tests, but at giving them at the same time a thorough scientific training in methods of investigation. Much that is thus valuable for training is of little or no value in its practical application. Now the men in general practice may need this training in method fully as much as the students, but few of them feel that they can spare the time for a course based on such lines. It is better to put within their reach a course which will teach them just the practical points they can apply, than to offer only courses which are theoretically more complete but which they will not avail themselves of. If such courses are inconsistent with the thorough scientific spirit of the medical school, they could be given by competent men outside, especially at the hospitals. There are plenty of opportunities for such work, but generally they have not been properly utilized for our object. As a rule, such courses have either been modeled too much after the exhaustive school course or they have been clinical courses in which the laboratory work has held too subordinate a place. The untrained physician needs for laboratory work more time and patience from the instructor than is given in the ordinary clinical course. He gets an unsatisfactory amount of laboratory instruction only at the expense of a lot of time on other clinical work, which, though most excellent in itself, is not exactly what he desires at the time.

Post-graduate medical work is different from undergraduate work. The physician who takes post-graduate work has a pretty definite object in view. I think we should be more willing than we are to meet just that object in the individual case with the least possible waste of time. We should not treat him as an undergraduate, to whom we properly say that in studying a given subject he must learn at least so much and in just such a manner. If the general practitioners want such courses, they have but to ask for them. If the demand is made, some of the many competent men who have clinical facilities can easily arrange such courses and would do so. That such courses are not more common is due chiefly to the indifference of the general practitioner.

There is yet another means for the busy practitioner to acquire this skil . We are sending out from the medical schools every year many graduates who have had excellent training in these methods of investigation. They are thoroughly "up-to-date" in methods, but lacking in clinical experience. The general practitioner has the clinical experience, but is rusty or behind

the times in methods. Here are two sets of men who have much to teach each other, but the opportunity for mutual benefit is seldom made use of. In the coöperation of the man of large clinical experience with too little time for laboratory work, and the present graduate with plenty of time for such work and too little practical experience, is a most promising field for the benefit of both these practitioners as well as the patients.

Such coöperative work in private practice is an excellent substitute for the school or hospital courses I have spoken of. The time can be arranged more conveniently for the practitioner than in a clinic, which usually comes at the busiest time of his day, and thus one of the greatest obstacles to his study of such subjects is removed. Nor is the benefit all on his side. He can provide the equipment for their common use, which the young practitioner can perhaps ill afford to buy. And an intelligent discussion of the clinical, as well as the laboratory, aspects of the case cannot but be full of benefit to the young graduate.

Indeed, one of the faults of our medical education at the present time is an exaggerated view in the mind of the medical student as to the importance of laboratory work in general practice. His view is commonly as one-sided as that of the general practitioner who undervalues such methods. In these days of the triumphs of laboratory research and of our zealous pursuit of "scientific medicine," it requires some courage to say that this side of medical education is overdone in the schools; but a careful observation of students and recent graduates has convinced me that such is the case.

The student to-day shows too great a tendency not to think about a case until he has it in some way under the microscope, and then his diagnosis must fit his microscopic findings. Is our technique so perfect that this is always the crucial test? Are we to make a diagnosis of tuberculosis only after the tubercle bacilli have been found?—or of typhoid fever only after the Widal reaction is positive? And especially are we to decide that the patients cannot have these diseases because the laboratory investigation is negative? If we determine our treatment on this basis, we shall make grave mistakes. I have often seen the man whose accurate technique I have envied fail to recognize a case of tuberculosis when "phthisis" was written on the patient's aspect in indelible lines. His view of the case, as a whole, was as limited in extent as the field of his microscope.

I have seen the wise general practitioner (who, however, could not use an oil immersion lens) and the thoroughly trained recent graduate on the same case. The former said the case "looked like typhoid," and insisted on treating it as such. The latter was all at sea because the Widal reaction was delayed, and he didn't know what to do for the case. In a few days his doubts were removed by the appearance of the Widal reaction, but in the meantime the patient had had the best treatment from the old family physician.

Indeed, the young laboratory expert has much to learn from the general practitioner about clinical medicine. He has a better foundation, to be sure, but to-day when we turn him loose with a degree of M.D. to practice, he has laboratory astigmatism and needs glasses to correct his vision. The proper material for these glasses is "common sense," and the glasses should be ground on the stone of experience. For correcting this form of astigmatism the general practitioner is an excellent oculist.

Of course there is the other side. For example, how many times does the general practitioner saturate his patient with quinine for the supposed chills of malaria, when an examination of the blood, showing the absence of plasmodia and the presence of leucocytosis, would demonstrate a septic or suppurative process hidden somewhere in the body. Knowing that it is present, though hidden, it may be sought out and properly treated. Examples might be multiplied on either side to show what may be accomplished by the coöperation of the older and the younger practitioners.

Naturally we must look to the older practitioners to take the initiative in establishing such coöperation. To some extent the services of the younger men are already utilized in this way, but it is not done enough, and it is not usually done in the right way. Generally the younger man is given a specimen and merely asked for a report. He thus gets no opportunity to know the clinical bearing of his work, while the older man holds himself aloof from the investigation and its technique, a better knowledge of which would enable him to better understand both the advantages and the limitations of such work. This complete separation of the clinical and the laboratory side of the investigation is undesirable. It is too prevalent even in our best equipped hospitals. Neither the clinician nor the pathologist gets the best results from his work unless both sides are considered together.

Let us then coöperate. Let us drop our prejudice against the young man who settles in our midst. We cannot justly look down on him as an inexperienced youth, for in many respects his experience and equipment are superior to ours. Nor yet need we view him as a dangerous rival who is likely soon to usurp the professional position we have established. Rather is he a useful aid, from whose enthusiasm, as well as knowledge, we may gather the stimulus which will preserve the vitality of our medical work. Unless by our own initiative or by such outside stimulus we keep our medical work vital and fresh and abreast of medical advance, it stagnates and then retrogades. In these days when the strenuous struggle for existence is more and more apparent in our crowded profession, the consideration of self-interest, if no higher motive, should lead us to make a better use of the opportunity offered by contact with the recently trained

medical graduate. The man is not unknown in our profession whose best work was done in the few years following his graduation, when he was perforce "up-to-date." We must keep up with the procession or fall by the wayside. There are plenty to fill our places, and the public, on whom we depend for our livelihood, are getting more exacting in expecting of the doctor the best skill attainable.

Let us ask once more: What may be reasonably expected to-day of the general practitioner in the way of laboratory investigation? This work is not concerned with the examination of the patient as a whole; that is clinical. It is concerned only with such parts of the patient or such products as may be safely and conveniently carried away for more careful examination than is furnished by our unaided senses. Specimens of tissue which may have undergone pathological change belong generally to the pathologist as a specialist. Few of us may hope to deal successfully with such matters.

One tissue, however, easily comes within the range of the general practitioner, and for our purposes it is a very important one, namely, the blood. The counting of the red and the white corpuscles is not difficult, and often gives most valuable information. The microscopical examination of the character of both kinds of corpuscles, both in the fresh and the stained dry specimens, is often of even greater importance. Neither this nor the examination for the plasmodia of malaria are beyond the reach of the general practitioner. The estimation of the hemoglobin by means of the Tallquist paper and scale is no more difficult than taking the temperature. By it we get most valuable information as to the degree and progress of a case of anemia, yet how few physicians make use of this simple measure!

The Widal test for typhoid fever, necessitating the use of a fresh culture of the typhoid bacilli, is hardly within our reach, but we have access in this vicinity to the aid of public laboratories, and our part in furnishing the material is easily performed but frequently neglected. The examination of the blood for bacteria is seldom necessary and involves too intricate a technique for the general practitioner.

Of the products of health or disease the physician may to advantage examine the urine, sometimes the feces, the sputum, pus, vomitus, and the gastric contents. All of these may in suitable cases give most valuable information. And yet too many of us make none of these examinations but the testing of the urine for albumen, and some even neglect that when it should be done.

Another laboratory test is the bacterial diagnosis of diphtheria. This is more advantageously done by the aid of the public laboratory. It is of the utmost importance in any suspicious case. Fortunately the utility of this aid to diagnosis has been so clear that it has been generally adopted by the profession. Yet even this test is not always resorted to as early as it should be. If we cultivated what I may call the laboratory habit of mind we should neglect fewer cases and thereby prevent suffering and save some more lives.

In our vicinity easy access is had to the public laboratory, not only for aid in the diagnosis of diphtheria and typhoid fever, but for tuberculosis and malaria. There can be no excuse for the physician who does not have these tests made when they would benefit the patient.

I may sum up my argument as follows: What may be called the laboratory method in clinical medicine is of acknowledged value as an aid to accurate diagnosis and hence to the successful treatment of disease.

Such measures are not employed by the general practitioner as fully as they should be.

The wider application of these measures is desirable, and is our duty, first, because it will be of benefit to our patients. Secondly, the ability to perform such work is becoming more and more a necessity for the successful practice of medicine, and motives of self-interest should urge the general practitioner to catch up with the line of progress.

Of the man who has plenty of time and does not choose to thus equip himself little need be said, save that he is short-sighted and will sooner or later suffer in competition with his better-equipped fellow practitioners.

To the man who thinks he is too busy to enter upon this work, it should be said that the requisite skill may be acquired (if not already possessed) at a less expenditure of time than is usually supposed, and that, if necessary, a little sacrifice of time for this object would be one of the best investments he could make.

To the practitioner who is really too busy with routine practice to do such work himself, it should be said that nevertheless this work should be done where necessary. The services of the public laboratories and of less busy but thoroughly equipped practitioners should be utilized.

We should all remember that a wider application of these methods is our duty as enlightened physicians.

Original Articles.

PNEUMOTHORAX ASSOCIATED WITH FRACTURE OF THE RIBS. REPORT OF TWO CASES.

BY FRED T. MURPHY, M.D., BOSTON.

THE two cases which I have to report illustrate the extreme degree of that common complication of fracture of the ribs, pneumothorax. Stabs and gunshot wounds of the thorax, perforation of the lung or pleura by malignant disease or suppurative process may lead to a similar condition; also gas formation by the Bacillus aerogenes capsulatus [1] or coli communis.[2] Concerning the great classes of pneumothorax, namely, those secondary to the removal of the chest wall with the parietal pleura as in operations, and the

tubercular and so-called non-tubercular types, a brief mention would seem appropriate. From the varying opinions and conflicting case reports the conclusion is warranted that an opening of the parietal pleura is not the dangerous procedure it was once considered. On opening the pleural cavity the lung will collapse, but if the pneumothorax be created slowly there is, as a general rule, no extreme shock.[3] Even if the dyspnea does become alarming, inflation of the lung by the Fell-O'Dwyer apparatus, or by drawing up the lung and fixing it in the pleural opening, the respiratory difficulty is at once relieved.[4] Hence the preliminary production of adhesions or a moderate degree of pneumothorax by the injection of air, as has been advised, is not necessary before performing an exploratory operation on the lung.

The great variations which have been recorded must be explained by the personal idiosyncrasy of the patient and the suddenness of the compression. The tubercular type accounts for about 80% of all cases in any tabulation of large numbers.[5]

So far as the treatment of the actual pneumothorax with tuberculosis is concerned, it has but little interest, as the prognosis depends rather on the general condition than on the amount of air within the pleural cavity.

A sufficiently large number of cases have been recorded to prove that a non-tubercular type does exist.[6] Here the onset is without violent trauma and often without any apparent cause.

In both of the above classes puncture of the chest wall to relieve pressure has been advised if the dyspnea becomes rapidly alarming.

That the parietal pleura should be torn and the lung lacerated in fracture of the ribs would appear to be a natural sequence. The force of the blow is from without inward, and the periosteum and pleura can offer but a feeble resistance in case the jagged end of the rib overrides at all. Doubtless the spongy, yielding character of the lung tissue protects it to some extent, yet it must be often injured. Also a blow received in full inspiration might easily rupture the pleura covering the lung without other injury to the thorax. Recognizing simple fracture of the ribs as one of the common injuries, it is difficult to explain the rarity of a serious pneumothorax.

In the Massachusetts General Hospital records for twenty years there are catalogued but these two cases, and Murphy [7] states that only twice in twenty years of hospital work has he seen an extreme collapse from this cause.

He also mentions the common occurrence of a slight degree of pneumothorax as a sequel of fractured ribs. With the chest wall intact or nearly so, given a rupture of the lung and its pleura and an increase of the intra-tracheal pressure above that within the pleural cavity and a pneumothorax is possible.

These conditions are repeatedly present without symptoms, since the amount of air is too rapidly absorbed, or the edges of the wound agglutinate before the degree of pressure is severe enough to cause collapse, or the formation is too slow, or the patient shows a personal tolerance.

As preventing a pneumothorax adhesions have been mentioned, but it is in the condition most prone to adhesions that the vast majority of all cases are found, and Duplant [8] reports an autopsy with the bands drawn tense across the cavity. Plainly they play no important part. The adherence of the pleuræ is too weak to offer resistance, and it is counterbalanced by the elasticity of the lung, which equals 7 mm. of mercury. The formation then of this closed type with which we are concerned is simply a question of forcing air from one reservoir — the lung — into a second — the pleural cavity.

In quiet respiration the combination of the adherence of the pleuræ, the elasticity of the lung and the intra-pleural pressure balance so that the lung follows by expansion and contraction the vacuum formed by the changes in the size of the thoracic cavity due to the action of the respiratory muscles. Strong inspiration gives a negative pressure in the trachea of 30–74mm. mercury; strong expiration a positive pressure of 62–100mm.[9] Forced within the pleural cavity by the strong positive pressure in strong expiration, if a return of the air is not possible the accumulation will go on until the intra-tracheal pressure is equalled. Therefore a pneumothorax of the closed type is not simply a collapse owing to the atmospheric pressure as in the open type, but the lung may be actually compressed. In reference to the return of the air from the pleural cavity, the doctrine of a valve formation, more or less complete, has been generally accepted. Autopsy findings have not substantiated this view.

Bard,[10] working on animals and experimenting with the human lung suspended within an air-tight jar provided with manometers, has demonstrated that the passage of air, from the nature of the lung tissue, is from the lung to the pleural cavity and not *vice versa*. This is independent of any evident valve formation. With a resection of a portion of the lung 9 x 5 x 10 cm. he found that pressure in the trachea increased that in the jar to an equal degree, but the air could not be forced back through the open lung. This was substantiated by numerous other tests. Accepting this conclusion, in a case of rupture of the lung, not involving a bronchus, the increase of the intra-tracheal pressure is the vital factor. This we see produced by the coughing and straining with and after the injury.

To account for the shock seen in the serious cases of too rapidly formed pneumothorax of either the closed or open type many views have been advanced. The irritation of the pneumogastric filaments by the sudden contraction and the displacement of the mediastinal organs, causing obstruction to the venous return, may have some influence. Hence a right-sided pneumothorax which would have the more effect on the vena cava is the more serious. Also the decrease in the capacity of the other pleural cavity from the pushing over of the mediastinum may be a

factor. As the circulation is such an elastic apparatus it is hardly possible that the increase of blood from the contracted lung is important. The sudden change in the respiratory mechanism, cutting off a large amount of active lung substance, thus dimishing absorption, as in embolism, is the important fact regardless of the exact method of reaction. With the mediastinal partition displaced Murphy thinks that the piston action of the diaphragm is lost and to this he would attribute mainly the distress.[7]

Laennec [11] gave a clinical description of pneumothorax to which little or nothing has been added. Tympanitic resonance, diminished or lost fremitus, decrease or absence of respiratory sounds, metalic quality of voice and rales, displacement of the heart and immobilization of that side of the chest with possibly bulging of the intercostal spaces, combined with dyspnea, make an unmistakable picture. In the chronic cases there may be but little evidence of intrapleural pressure, and the character of the percussion note may be misleading. Hippocratic succussion may be obtained when fluid is present.

As an acute condition secondary to injury of the chest wall there is nothing else with which it might be confused.

The subcutaneous emphysema of the thoracic wall is due to the escape of the air under pressure through the wound of the parietal pleura; that in the neck from the escape along the bronchi and trachea. When the dyspnea is only moderate, treatment consists of morphia and immobilization of the chest wall to control the forced expiration. Ordinarily these measures will suffice, but if the collapse becomes alarming, puncture of the chest wall and possibly aspiration are indicated. Contraindication to either procedure is the danger of reopening a partially agglutinated wound, hence they should be delayed as long as possible. Aspiration theoretically is especially dangerous on these grounds. Complicated by hemorrhage the question of open exploration comes up and is favored by the majority of operators. For the attendant emphysema subcutaneous incisions may be necessary to relieve the tension. After the recovery from the collapse, if there is no serious organic complication, the lung returns to its normal position within a comparatively short time. Experimentally any increase in the tracheal pressure after the repair of the wound hastens the absorption of the air.

The following abstracts from reported cases give an idea of the character of the injuries. Hamilton [12] records a case of simple fracture of the ribs followed by pneumothorax and emphysema. He comments on the infrequency of the complication in a degree to cause alarm. His patient was relieved by subcutaneous incisions. Regarding treatment, he quotes Mr. Erichsen as being in favor of puncture and Professor Spence as advising simple subcutaneous incisions. Stewart [13] presented at a clinical meeting the account of a greenstick fracture with pneumothorax. As the child died later an autopsy was obtained and the lung was found collapsed. Here aspiration gave no permanent relief, but free opening of the chest wall did. In the discussion which followed, pneumothorax under such conditions was considered to be not a dangerous complication.

Laurens and Darcanne [14] report a case with autopsy findings. There were multiple fractures of the ribs, and the lung was found with a large tear and collapsed. Nothing had been done to relieve the dyspnea.

Morris [15] has given an account of a man who, after a fall of twenty feet, developed emphysema and a pneumothorax of the left side. The lung was evidently collapsed and the pressure was sufficient to change the pericardiac dullness, yet there was no extreme dyspnea, and the man recovered in five days without treatment. There developed a peculiar click over the cardiac area which the writer attributes to the rubbing of bubbles of air between the pleura and pericardium.

Le Boutillier [16] has published a case of pneumothorax in a boy of fifteen who was run over by a wagon. Aspiration gave only temporary relief, and at autopsy two days later two large ruptures of the lung communicating with bronchi were found. There was no fracture of the rib.

Phalip [17] mentions a case in which the pneumothorax developed after thoracentesis.

The two cases which have come under my observation were admitted to the accident room of the Massachusetts General Hospital on the service of Dr. S. J. Mixter, and to him I am indebted for the privilege of reporting them.

CASE I. J. E. G., fireman, forty years of age. Patient was brought in late in the evening with the history of having been thrown from the truck and run over by the hind wheel. Examination showed a strong man in a mild state of shock. The pulse was good at ninety to the minute and the respirations were not markedly accelerated. Heart was normal. Lungs were normal except for a few râles in the right axilla; no dullness, no diminution of respiration or fremitus. There were multiple bruises on the legs and body. The left shoulder was dislocated and the ribs on the right side from the second to the fifth or sixth fractured in the anterior axillary line.

In the right axilla there was some emphysema. Across the back in the upper lumbar region was an abrasion about the width of the tire of the wheel. The belly was negative and the urine free from blood. Color and respiration were good enough to warrant giving ether for the reduction of the dislocation. Double swathe of adhesive plaster was then applied to the chest and the patient sent to the open ward. In the ward he was given morphia grain 1-6 subcutaneously. During the night he was seen by the house officer in charge of the upper wards and the morphia repeated, as he was apparently suffering much and the color was bad.

The next morning his condition was so bad that he was transferred to a single room. When I saw the patient for the second time the picture had completely changed. The face was cyanotic, the respirations rapid and labored. Examination of the chest now showed a tympanitic resonance over the right side with loss of respiratory sounds and fremitus. The heart was slightly displaced to the left. The pulse good. One-fourth grain morphia was given subcutaneously without relief. By this time the condition had become really alarming, and the friends had been gathered at the bedside. After a confirmation of the examination and diagnosis by the medical attendant the chest was punctured below the angle of the scapula. At once with the outrush of the air the extreme dyspnea ceased and the color returned. Aspiration

seemed to afford even greater relief, so it was kept up for one half hour. Then there was some coughing and a discharge of a small amount of blood. Respiratory sounds were present well down on the right side and the cyanosis completely relieved at the end of the aspiration. The heart returned to its normal position.

From that time on the patient complained only of pain in the arm, which was due to a fracture of the clavicle which had not been noted on admission. On the next day the lung had expanded to the level of the eighth rib in the back, and the patient was resting comfortably

Two days after the injury and one after the aspiration there was a sharp rise in the temperature, pulse and respiration, but no discomfort or cyanosis. There was an immediate cessation, however, of all symptoms, and on the ninth day he was discharged well.

Five days after aspiration the lung had returned to the normal position. The emphysema cared for itself.

Case II. J. Q., nine years old. The child was seen in the accident room about 4 P.M. He had been thrown from a bicycle by a team, but whether he had been run over or not no one knew. Examination showed a strong boy in poor condition. Color was bad, the respiration rapid, thirty-five to the minute and labored. Pulse 135. Both sides of the neck and the left back were markedly emphysematous. The chest was resonant all over but on the left there was absence of breathing and fremitus. The belly was not remarkable, and there were no marks of injury except to chest. In fact there was no definite fracture of the rib, only a marked tenderness on the left under the emphysema.

As the condition was rapidly becoming extreme no further examination was made, but a large trochar was inserted on the left at the angle of the scapula. A rush of air followed the insertion, and the dyspnea was immediately relieved and the cyanosis disappeared.

The child announced that he no longer felt as if he was suffocating. After the first escape of air considerable blood ran out. The trochar was kept in for five minutes, during which time the lung had expanded over the upper three-quarters of the chest. The chest was immobilized and $\frac{1}{12}$ gr. of morphia given subcutaneously and the child sent to the ward. As far as symptoms and treatment went he might as well have been sent home. On the second day there was a rise in the temperature of two degrees, but not once did he complain of pain or dyspnea. All but a trace of the emphysema and pneumothorax had disappeared by the fourth day.

In the case with the more serious injury we see the symptoms developing after hours and in the other immediately. That a slight degree of pneumothorax was present on entrance to the hospital is proven by the subcutaneous emphysema, but why the dyspnea should have been so long delayed I can explain only on the assumption that in the manipulation of reducing the dislocation or the vomiting on coming out of the ether or during a fit of coughing the wound, primarily closed, was forced open. Possibly either patient might have recovered without relief by puncture, but the condition seemed to offer a very bad prognosis.

Experience has proven that interference is rarely necessary to relieve the intra-pleural pressure after fracture of the ribs. In the type of case illustrated by the above reports it certainly gives relief, and may be a life-saving measure.

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SOME OBSERVATIONS ON X-RAY THERAPEUTICS IN SKIN DISEASES.

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The following observations on x-ray therapy are drawn from one hundred and fifty cases of skin disease treated at the Massachusetts General Hospital during the past year in connection with the routine work of the skin department. From the outset of the work, the number of cases of epithelioma continually coming to the clinic has considerably handicapped the treatment of a greater variety of diseases. In fact, a majority of the time has been spent in the treatment of epithelioma and tuberculosis; in the beginning according to a fairly well-conceded technique established by observers in this country and Europe, and later by such modifications as subsequent experience suggested. The great influx of cases soliciting x-ray treatment may well be compared to the number of lupus patients appearing for treatment soon after the advent of tuberculin, while the variety of ills for which persons have come would be absurd to enumerate.

That an estimate of the number of cases and variety of diseases treated may be readily made, a table was made indicating the disease, site and character of the lesion exposed, the total number of exposures, the average duration of the exposures and the average distance of the lesion from the anode. The quality of the rays sought and used as constantly as possible will be hereinafter mentioned. Patients with localized lesions have all been protected by means of lead foil covered on either side with adhesive plaster, in which an aperture was cut corresponding to the size of the lesion exposed. This protection has in all cases been sufficient, no evidence of reaction over the protected area having been seen. Diffuse lesions, as psoriasis, have usually been treated with only the head protected when it was in range. The possibility of a harmful x-ray dermatitis occurring during treatment has been constantly in mind, but I have yet to see ill result from a properly guided exposure. In this series of cases no ill effect was obtained. Occasionally an hyperæmia of the exposed area occurred, accompanied by a sensation of burning, but such reaction has always been temporary, except when prolonged intentionally, and by omitting exposures invariably subsided.

Most observers concede that the Roentgen rays are not an isolated variety of radiations, but aggregations of radiations of varying penetration, intensity and absorbability. No one, I think, who has attempted x-ray therapy and used tubes of various potentialities can help acknowledging the truth of this theory. The different degrees of vacuum show plainly varying degrees of penetration and quality as demonstrated by the fluoroscope, the photographic plate and reaction on the normal and diseased skin. I am corroborated, I believe, by most observers in this work in the opinion that tubes of low vacuum are best adapted to therapeutic use.

The quality of rays that has seemed to be best for cutaneous use are those showing black bones of the hand with the fluoroscope at a distance of a foot from the tube; this degree being generated by 1.5 to 3 amperes of primary current and induced by a coil with a maximum spark distance of twelve inches, the frequency of interruptions varying between twenty and thirty thousand per minute. Desiring a more accurate gauge for routine work, I have adopted for present purposes and convenience the penetrability of aluminum as a standard of measurement.[1] In a block of aluminum one inch thick and four inches long a series of eight holes were bored, the first hole leaving a remaining thickness of an eighth of an inch, the second two-eighths of an inch, and each succeeding one-eighth inch thicker, till the eighth, which had a thickness of one inch. This block, fastened to a fluoroscope and adjusted before a radiating tube, shows a certain degree of potentiality according to the thickness of the aluminum penetrated. The degree of radiations that has been found to give the best results in the treatment of cutaneous diseases, such as epithelioma, tuberculosis, etc., is that penetrating a two-eighths inch thickness of aluminum, while the succeeding degree of three-eighths remains quite opaque.

In advocating the above-mentioned quality of rays, I do not by any means assume such rays to be the solitary factor which achieves the results, but I do think that tubes generating such rays are either most potent in themselves or best allow the activity of other contributing factors. The static discharge is certainly greatest from tubes of low vacuum, and reaction analogous to the actinic rays is most readily brought about. Until the conflicting elements are successfully eliminated from tubes as at present used for purposes of treatment, or the separate action of each of the elements is better understood, we are justified in speaking of x-ray therapeutics only in the popular sense of the term.

Of all the diseases treated epithelioma has given the most constant and encouraging results. Most of the lesions were of the rodent ulcer type and situated on the face. A few cases of deeply seated carcinoma involving the skin were treated and gave entirely different results from the superficial epithelioma. These graver cases were exposed daily and tried with both low and high tubes with completely negative results. A temporary cessation of pain in some cases was all the good attained. In three of these cases a pathological examination showed the subcutaneous involvement. In the total number of fifty-five cases of epithelioma treated, twenty-seven were discharged healed, with no visible evidence of the disease left but the scar; nine progressed favorably but failed to continue treatment, and nineteen are at present under treatment, reacting similarly to those already healed. Each patient was treated at an average interval of twice a week, such changes being made in each case as seemed advisable, either on account of individual susceptibility of the patient or the reaction of the particular tube used at the time.

A quite constant evolution in the healing of epitheliomata seems to occur. When the lesion is ulcerative, as a majority of them are, a dryness of the ulcerated surface is noticed after two or three exposures to the rays; this dryness increases until a thin crust is formed, which gradually thickens as the exposures are continued, until it attains a thickness varying in different cases from one eighth to one half inch, the latter thickness presented a prominent and disfiguring appearance, which frequently suggests to patients that they are getting worse rather than better. While the crust thickens above the healing in beneath the surface occurs. The edges of the ulcer gradually contract, lessening the area of ulceration, until when or usually somewhat before healed, the crust falls spontaneously or is so slightly adherent that it is unavoidably removed by the patient. I have thought that healing might be accelerated by removing the crust when it became prominent and thick, but I have found that early removal has almost invariably been followed by a repetition of crust formation, and in comparison with cases whose crusts have been allowed to remain intact throughout treatment, I believe healing is not shortened by their early removal. In some cases several crusts are formed before final healing. In non-ulcerative epitheliomata the change in healing is not so constant, and the course of treatment is a good deal more protracted. After a varying number of exposures, these lesions either become ulcerative by erosion of their surfaces, and in which case they react in a similar manner to the ulcerative variety, or after long continued exposures gradually shrink until all that is lift is a firm scar. A preliminary curettage or cauterization facilitates healing of this variety of epithelioma.

A class of epitheliomata of the face in which I have been particularly interested is that involving the nose, the eyelids and canthi. Such cases are usually ulcerative; those involving the eyelids and canthi are a menace to the eye, causing great disfigurement by ulceration and subsequent ectropion of the lids, while the lesions of the nose and other portions of the face are always a cause of progressive deformity. Cases of this class have all done remarkably well; they have almost uniformly responded to treatment and have healed, leaving a soft scar with no contraction of the cicatricial tissue. No ill effect to the eye from exposures of lesions in its neighborhood has been seen. Frequently when the ulcerated lid rendered it impossible to completely protect the eye, and where the conjunctiva was exposed beneath, not more than a mild and transient conjunctivitis was remarked. Scars in general following healing by the rays are soft, smooth and non-contractile, a softening effect seems even to be often exerted on previously formed scar tissue.

[1] This standard was suggested to me by Mr. Dodd of the Massachusetts General Hospital.

From the favorable effect of x-ray therapy on a large majority of cases of epithelioma treated, I cannot help concluding that it at present offers the best relief to a certain class of epitheliomatous lesions. Many cases are much better and quicker treated by excision, and it is waste of time to treat very small lesions for weeks with the rays when they can be effectively destroyed in a few minutes with curette and cautery. Epithelioma and carcinoma below the cutaneous surface and even lesions which have become deep by infiltration from the skin, should not be treated by the x-rays with the hope of curative effect. All of the deep cases which I have attempted have proved uniformly failures, though treated by rays of various potentialities; and in a large number of carcinomata of the breast that I have had opportunity to observe under treatment, any permanent benefit was equally negative. There is almost a constant temporary relief from pain and occasionally considerable improvement in the general condition of the patient. The permanency of cure of epithelioma may yet fairly be questioned, though relapse has not been seen in any case discharged by us. There are at present under observation several cases who have been healed from eight months to a year. One case shows a soft scar of the cheek of thirteen months' duration. The control of lesions is at least remarkable and sufficiently satisfactory to encourage the continued use of the rays for the treatment of epithelioma.

Twenty-one cases of tuberculosis of the skin were treated by the rays, including lupus and scrofuloderma. Of the last mentioned types of tuberculosis, lupus has proved the more resistant and difficult variety to cure. Compared with epithelioma, the treatment of lupus is much more protracted and intenser exposures are required. Nine cases of lupus were healed, and as far as can be judged at present, cured. In all these cases the desired benefit did not begin until a decided dermatitis of the exposed area occurred. The reaction was usually accompanied by considerable pain, marked redness of the skin, and after a few days beginning sloughing of the lupus tissue. After varying periods of time, from a few weeks to months, depending upon the extent of the disease and its resistance to treatment, the lupus areas were replaced by cicatrices which were of the character of most x-ray scars, — soft and smooth.

While the treatment of lupus has seemed discouragingly long in some cases both to patient and physician, the ultimate result attained fully repays the patience and time expended. In no disease treated has healing been more rapid and more remarkable in its general effect than in scrofuloderma. The healing process seems to consist in a destruction of the tuberculous tissue, followed under the stimulating effect of the rays by rapid healing. The first three or four exposures should be of moderate intensity until the ulcerations begin to slough; at this stage to one not familiar with the evolution of healing the disease would appear to have been made worse, but as the treatment is continued by exposures of three to five minutes twice a week, the ulcerations rapidly heal and soon are replaced by cicatrices. Simultaneously with the improvement of the local lesions frequently there is betterment in the general health. I have in mind a case of a little girl of six years with extensive scrofuloderma of the right leg. During the treatment she gained ten pounds and changed from an anemic and scrofulous to a healthy appearance.

Folliculitis of the beard has responded to treatment with remarkable constancy. Eight cases were entirely healed and none attempted failed to improve. The disease, as is the case with other treatment, has a liability to relapse. I have seen two recurrences, one at the end of two and the other after six months. Cases accompanied by itching are soon relieved of that discomfort; the follicular pustules gradually dry until their resulting crusts are desquamated and all symptoms of inflammation have subsided. In several cases the treated portion of the beard fell, but in no case was the alopecia permanent, although often return did not occur for six or eight weeks.

The test of the value of the rays for psoriasis has been a rigid one. All the cases treated have been those who have come to the clinic for months or years and have been refractory to other methods of treatment. Not a lesion treated by the rays has failed to disappear under their influence. Two cases with generalized lesions have, after a great many exposures, been completely healed. One of the above-mentioned cases has been cleared nine months, and the other six months without return. In the other cases put down as healed only portions of the body have been cleared sufficient to ascertain the efficacy of the rays in each case. Considering that all the cases of psoriasis treated have been those not improved after a thorough trial by other means, the x-rays compare not only favorably with other methods of treatment, but are able to heal cases of psoriasis not otherwise influenced. Eczema, especially chronic cases with epidermic thickening, responds quickly under the rays. All the cases attempted have been healed. That the x-rays have definite therapeutic value in certain cutaneous diseases is at present quite generally accepted. They have been found to be like many therapeutic agents — of distinct value in a few diseases, palliative for the relief of pain in many affections, and of no benefit, if not distinctly harmful, in an unknown number of others. It was only after observation over a considerable period of time, on a large variety of cases, and after thorough treatment, that I became impressed by the fact that no radical curative effect is exerted by the rays subcutaneously.

Tuberculous Teachers Barred. — The State Board of Health of Indiana has issued orders forbidding the reemployment in the public schools of 250 teachers who are affected with tuberculosis.

RECORD OF PARASITIC INFECTIONS IN THE PHILIPPINES.

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THE following reports represent the findings in one hundred and thirty-six autopsies performed while on duty in the Board of Health, Manila, P. I., during 1900 and 1901:

Intestinal parasites:

TABLE I.

Total infection		53	38.97%
A. L.[1]	29		
Ank.	10		
Tri.	13		
T. S.	1—53		
Of these there were single infections		40	29.41%
A. L.	25		
Ank.	5		
Tri	9		
T. S.	1—40		
Double infections		5	3.67%
A. L. and Ank.	2		
A. L. and Tri.	1		
Ank. and Tri.	2—5		
Triple infections		1	0.73%
A. L., Ank. and Tri.	1		
Total cases		46	33.82%

As these cases came from various localities the percentages given fairly accurately represent the parasitic infection among the natives.

The following table represents the age and sex of the cases coming to autopsy:

TABLE II.

Adult males	74	54.40%
Adult females	31	22.79%
Male children	20	14.70%
Female children	11	8.08%
	136	99.97%

Ascaris lumbricoides were usually found in small numbers, varying from one or two to eight or ten; in two cases larger numbers were present, in one of these sixty-nine worms were counted. Usually the worms were found in the intestines, but in two cases a number had migrated to the stomach; in one case a large worm had entered the common bile duct, and in one case several were found in the posterior nares. In one case the worms had formed a firm ball which was lodged in the upper portion of the ileum and sufficiently large to practically obstruct the gut.

Distribution of A. L. with regard to age and sex:

TABLE III.

Male adult	13	44.82%
Female adults	5	17.24%
Male children	7	24.14%
Female children	4	13.79%
	29	99.99%

If the figures in Table III are proportionately raised so as to represent a number of autopsies in each sex and age equal to the maximum number of autopsies for any sex or age, which is 74 for adult males, the following table may be had:

TABLE IV.

Infectious.

Adult males	74	13	16.72%	32.01% adults.
Adult females	74	11.9	15.29%	
Male children	74	25.9	33.29%	67.99% children.
Female children	74	27	34.70%	
	77.8		100.00%	

Consolidating the above table gives:

TABLE V.

Cases.

Adults	148	24.9	16.8%	1:6
Children	148	52.9	35.8%	1:3

Table IV shows that proportionately 32% of those affected are adults and 68% children (under fifteen years), or that a little more than twice as many children as adults are affected; and in Table V it is seen that about 17%, or 1:6, of total adults and 35%, or 1:3, of total children are affected.

All of the infections with ankylostoma duodenale were light; eighteen worms was the largest number counted. Distribution was from duodenum to ileo-cecal valu. In all ten cases were found 7.3%, distributed as follows:

TABLE VI.

Male adults	8	80%
Female adults	1	10%
Male children	1	0 %
Female children	0	00%

If the figures in Table VI are converted as above, the following table may be had:

TABLE VII.

Cases.

Adult males	74	8	56.73%	73.75% for adults.
Adult females	74	2.4	17.02%	
Male children	74	3.7	26.23%	26.23% for children.
Female children	74	0.0	00.00%	
	14.1		99.98%	

Consolidating Table VII gives:

TABLE VIII.

		Cases.	
Adults	148	10.4	7.02%
Children	148	3.7	2.5%

From Table VII it may be seen that 74% of infections occur in adults, 26% in children and 83% in males. Of total adults, 7% and of children 2%, were infected, or three adults to one child.

Thirteen infections with Tricocephalus dispar were noted, distributed as follows:

TABLE IX.

Adult males	6	46.15%
Adult females	4	30.76%
Male child	2	15.38%
Female child	1	7.69%
Total	13	99.98%

[1] A. L.— Ascaris lumbricoides; Ank.— Ankylostoma duodenale; Tri.—Tricocephalus dispar; T. S.— Tenia solium.

If the figures in Table IX are converted as above, the following tables may be had:

TABLE X.

		Cases.		
Adult male . . .	74	6	20.27%	52.36% for adults.
Adult female . .	74	9.5	32.09%	
Male children . .	74	7.4	25.00%	47.63% for children.
Female children	74	6.7	22.63%	
			29.6%	99.99%

Consolidating Table X gives:

TABLE XI.

		Cases.	
Adults	148	15.5	10.4%
Children	148	14.1	9.5%

From Tables X and XI it is seen that males, females, adults and children are equally affected and that about 10% of the inhabitants harbor this parasite.

Considering the customs of the natives, especially as regards the opportunities for the contamination of their water supply, etc., the figures above, although high, are not so high as one would at first suppose. The relatively small number of Tenia is the more surprising when it is known that 4% of all hogs killed in Manila were heavily infected with cysticercus. Trichiniasis was not observed in any of the autopsies; a light infection was found in two hogs. Five cases of filariasis were found, all from the island of Luzon.

Clinical Department.

CLINICAL MEETING OF THE STAFF OF THE MASSACHUSETTS GENERAL HOSPITAL, APRIL 10, 1903.

(Concluded from No. 17, page 461.)

DR. C. A. PORTER spoke of two cases of

ADENO-CARCINOMA OF THE RECTUM.

The next two cases are almost identical with each other. Both of them suffered from an adeno-carcinoma of the rectum, about the size of a silver dollar, situated on the anterior wall in the prostatic region.

The first case I operated upon two and a half years ago, making an incision in the median line posteriorly through the sphincter ani, along the posterior rectal wall, for a distance of four inches. The coccyx and lower portion of the sacrum were removed to give greater room. The rectal walls were retracted, disclosing very clearly an ulcerated growth beneath. This was removed with a wide margin; the base of the bladder and prostate could be clearly seen. Two small glands were removed and upon examination were found to be non-malignant. The circular opening left after the removal of the growth was sutured horizontally, the posterior incision in the rectum longitudinally. The sphincter was carefully united with buried catgut sutures. Most of the skin incision was closed with silkworm gut. Two gauze drains were inserted on either side of the rectum, to the point of suture. Recovery was complicated on the fourth day by a slight fecal discharge which persisted for a week. From that time, convalescence was uninterrupted. At the end of a year the patient acquired perfect fecal control, but up to the present time, if the bowels are very loose, slight moisture is noticed, requiring a T bandage. Careful examination shows no evidence of recurrence. The man has gained twenty pounds.

The second case was operated upon six months ago for a similar growth on the anterior wall. A segment of the bowel was removed, through the same posterior incision without division of the sphincter. This case had no fecal discharge through the wound and had a perfectly normal convalescence. At present the man has perfect control of fecal matter, but imperfect control of gas. There is a slight eversion of the mucous membrane at the anus. In both cases a large rectal tube was kept in position for ten days. I think such cases show well the advantage of retaining the sphincter. In neither case could anything be gained by removing it, as the lower margin of the ulcer was at least two and a half inches from the anus. I have recently had two other cases in which a similar operation was done without incising the anus or sphincter.

DR. ARTHUR T. CABOT: I do not know whether the experience of others is like that of Dr. Porter and myself, but I have often found these adenoma-carcinomas on the anterior wall. In three cases I have removed them by a Kraske operation in which the posterior wall of the rectum was opened. The growth on the anterior wall was pulled through this opening, and it was then possible with a shoemaker's stitch to tie off the growth and then cut it beyond the sutures. In all of these cases the posterior opening through which the growth was removed was closed tightly by sutures, and the defect in the anterior wall where the growth was removed healed perfectly without gaping or giving any trouble whatever. These adenomas and adeno-carcinomas of the rectum are interesting growths, for there is a considerable period in their early history when they seem to be purely local, and during this time a thorough removal may be expected to work a cure; whereas, if neglected, they later inevitably take on malignant characteristics and lead to death.

DR. J. C. WARREN: I remember a case of this kind. The woman has reported from time to time. She has never had any recurrence. Dr. Elliot saw the case when I operated on it and Dr. Whitney pronounced it carcinoma. I think it belonged to the type discussed here to-night. The mucous membrane containing the growth was cut out and the sphincter and part of the rectum was left. I cannot help thinking, however, that the more radical operation is the better.

DR. C. A. PORTER showed a case of

PERONEAL PROSTATECTOMY

for Dr. J. W. Elliot.

The patient, aged sixty, male, tailor, Russian, entered Dr. Elliot's service on March 3, 1903. A year ago he had had acute retention, without known cause. Catheterized by physician for three months, after which he passed his urine without difficulty and with a good stream. Three months ago he had another attack of retention, after which he used the catheter himself. He now complains of severe pain at the end of the penis and in the back. He has never passed gravel. Two days ago, after catheterization, he passed a little blood, which continued until the time of admission. He has passed no water without catheter for three weeks. Rectal examination showed a small, firm prostate. No. 12 Coudé passed into the bladder without difficulty. Constant drainage. On March 13 operation was decided upon, since the patient would not allow catheter to remain in position. No blood in urine, odor foul in spite of frequent irrigation.

On the 14th operation was done by Dr. Elliot. A two-inch incision through the perineum into membranous urethra was made. The bladder entered by finger, and prostate found to consist of two lateral and one larger middle lobe. These three tumors were removed by finger dissection through the perineal wound. Bladder washed out; bleeding moderate. A stricture was found three inches from the meatus, which was divulsed. A large rubber drainage tube was inserted into the bladder through the perineal wound. On the 16th convalescence was good, drainage excellent, tube diminished in calibre. On the 17th tube removed and No. 13 gum elastic catheter passed into the bladder through the penis. On the 22d gauze was removed from perineal wound, which was granulating well. On the 28th, catheter removed and the bladder drained wholly through the perineal wound. On the 29th passed about six ounces of urine at a time per urethra. On the 31st, catheter passed to bladder, which was much cleaner after irrigation twice daily. On April 4 he was catheterized after passing six ounces of water. One and a half ounces of residual urine were found. On April 7 little pain, passes urine himself at two hourly intervals. Upon catheterization, only six drachms of urine found. Perineal wound occasionally leaks a little, but is granulating rapidly. Great improvement in general condition. Dr. Parker also showed a second case which had been operated on by Dr. Elliot. In this case Dr. Elliot had opened the bladder by a suprapubic operation and had removed two large, ovoid, smooth masses of the size of eggs. These masses were elastic and not connected with the bladder. On section of one of these ovoid masses, a small stone was found in the center, surrounded by layers of laminated fibrin.

DR. W. F. WHITNEY: As far as I know these are certainly very unique concretions. They consist apparently of a series of fibrinous lamellæ in the center of which is a stone. It has occurred to me that the formation was due to defibrinating of the blood, which formed the layers of the concretions. It is remarkable that it does not occur oftener. Why it should have occurred in this case I have no solution to offer. Nothing I have ever seen approach these in character.

DR. BEACH: I had a case this winter where the stone was covered with a thinner fibrinous deposit than is the stone mentioned in the discussion tonight, but it was sufficiently covered so that no click was heard when the sound came in contact with the stone. The specimen is in my possession now, and when it is shaken about in the bottle, there is no click when it comes in contact with the glass.

DR. BENJAMIN TENNEY read a paper on

THE CAUSE OF CERTAIN KNEE JOINT INJURIES.

In going over a series of knee joints from the dissecting room some time ago, I found a considerable number which showed damage to the internal semilunar fibro-cartilage.

The most common form of damage found is well shown in these photographs of cartilages, the posterior half of which show the effect of crush and wear. In order to produce this form of damage the internal condyle of the femur must over-ride this part of the fibro-cartilage and settle down behind it while the knee is being flexed. As the knee is extended again the cartilage may either slip back into its normal position with something of a snap, or it may be partially torn from its attachment to the back of the capsule, remaining attached to the internal lateral ligament, as in the case which Dr. Codman has described, or it may be torn from its capsular attachment for its entire length, being held at its two extremities and turned wrong side up into the intercondylar notch. An example of this last injury, I show you this evening.

In searching for a means of producing one of these injuries, I tried 24 undissected joints, flexing them with the foot strongly rotated outwards. In one, the internal semilunar caught and snapped back during this manipulation. This joint showed a marked increase in lateral motion. After rupture of the internal lateral ligament in the other 23 joints, it was possible to catch the semilunar in the same fashion. This indicated to my mind that the slipping internal semilunar cartilage was connected with previous damage to the internal lateral ligament of the joint.

Another one of my specimens shows a partial splitting of both semilunars from the posterior part of the capsule without any evidence of crush or friction. In this joint there was a complete rupture of the anterior crucial ligament. It is possible that this injury may also allow of some over-riding of the condyles on the cartilages, but experimental y it has not been possible to produce such over-riding without injury to the internal lateral ligament as well. If my conclusions are correct, the history of a case should show some injury to the internal lateral ligament of the joint, which results in increased motility at this point. At some time after this the joint is flexed with the foot rotated outwards, and the internal condyle over-rides the semilunar and settles down behind it. If this occurs frequently and without great violence, the results will appear in the shape

of cartilages such as shown in these photographs. If the over-riding occur suddenly, and with great muscular action, the condition as found by Dr. Codman may appear. If this persists without operation, the cartilage may be entirely torn from its capsular attachment as in this specimen.

Dr. Robert B. Greenough reported the following cases:

SKIN GRAFTING FOLLOWING A BURN.

Case I. H. C. (hospital No. 129,663), a young woman of twenty-four, entered the hospital on Oct. 31, 1903. Three weeks before she caught her left hand between the roller of a steam laundry mangle and received a burn over the palmar surface. The wound was dressed in the Accident Room and subsequently in the Out-Patient Department.

On examination it was found that the palmar surface of the left hand was a granulating surface from the wrist line to the last joint of the fingers. A part of the skin of the outer aspect of the thumb was intact. No tendons exposed except over the articulation of the first and second phalanges of the little finger. Operation, Nov. 5, 1902; R. B. Greenough; ether. The granulating surface was cleaned with permanganate and oxalic, peroxide and corrosive. It was then thoroughly curetted and the skin edges freshened. It was then douched with salt solution and bandaged with gauze compresses. A model of the flap needed to close in the defect was then made of gauze, about one-third being allowed for shrinkage. The skin under the right breast was cleaned with solutions and a flap of the desired size and shape dissected up, having its base downward. All of the subcutaneous tissues were included in the flap, which was about 4 x 5 inches in extent. The flap was then laid back on the abdomen and protected with gauze, while the bare space from which it had been raised was closed in by a modification of the plastic operation devised by Dr. Warren for closing the incision in extensive operations for cancer of the breast. In order to bring no strain upon the base of the hand flap the incision into the axilla was carried deep and the flap from the axilla made large and dissected up freely. By this means the defect was closed in entirely. The hand flap was then sutured in position on the palm, the arm being held at rest across the body. A protective dressing was applied and a plaster bandage of the Velpeau pattern was then put on to immobilize the parts. The wound was dressed on the second day and at frequent intervals after that time. There was considerable oozing from the granulating surfaces of the fingers, but the flap became firmly adherent and was well nourished when its pedicle was cut on the eleventh day. The wound then healed rapidly and the further convalescence has been uneventful. The present condition of the flap can probably be improved at a later date by the removal of the superabundant fatty subcutaneous tissue. The little finger promises to be of little value on account of the involvement of its tendon. The case is shown particularly on account of the ease with which the defect from which the flap was taken was closed in by a plastic operation; by this means the use of Thiersch grafts was avoided.

PERFORATING GASTRIC ULCER — RECOVERY.

Case II. L. P., a young man of twenty-one, tailor by trade, was brought to the hospital at 10 P.M. on Dec. 31, 1902, with the following history: Well until three weeks ago, when began to have indefinite symptoms of ill health, without localization in any organ. Lost appetite but did not vomit. Ate usual dinner of meat and soup at noon on day of entrance and was at work in the afternoon, when, at 4:30 P.M., on drinking a cup of tea and eating two crackers, was suddenly seized with intense pain in epigastrium. Rolled on floor with the pain and vomited several times, quantity small and no blood noticed. Pain increased in severity until entrance; no jaundice, no chill, no cough or lung symptoms and bowels had been moving regularly.

On examination, a fairly nourished young man, with an anxious expression of face and considerable color in cheeks. Respiration 36 and labored pulse 100 and of good character, medium tension. Temperature 101. Leucocytosis of 21,000. Heart and lungs negative. Abdomen very rigid and board-like, especially in epigastrium and right hypochondrium. Some tympany. Slight area of shifting dullness in right flank. Liver dullness markedly diminished. Rectal and urinary examination negative. The probable diagnosis of perforation of a gastric ulcer was made by the evidence of perforative peritonitis, the seat of symptoms in the upper abdomen and the diminished liver dullness.

Operation, six and a half hours after onset of pain; ether; Dr. R. B. Greenough. A median incision was made from ensiform to umbilicus. On opening the peritoneal cavity, gas and turbid fluid escaped. Cultures were taken, but showed no growth of bacteria; probably owing to some fault in technique; inasmuch as the stomach contents was free in the abdominal cavity, the stomach was explored, and on its anterior wall, close to the pylorus, a round perforation was found one-eighth of an inch in diameter, from which exuded fluid and gas. Considerable fibrin surrounded this opening, and the walls were thickened and of softened consistency. A purse-string suture was used to close the opening and a row of Lembert stitches were used to cover in the purse string until leakage no longer occurred. By this method of closure the lumen of the pyloric end of the stomach was so much obstructed that it was decided to perform a gastro-enterostomy, since the patient was in sufficiently good condition to bear the operation. The stomach was raised and an opening made in the transverse mesocolon, exposing the posterior wall of the stomach. To this the jejunum was united, at a point about four inches from the duodenum, by means of the McGraw elastic ligature. This anastomosis was protected by a row of Lembert stitches, and the stomach allowed to return to its normal position.

While this part of the operation was being done, the abdomen was thoroughly flushed out with gallons of salt solution until the turbid serum was entirely washed away. Two counter incisions in the flanks were made and cigarette wicks of gauze and rubber dam were introduced in all directions, two in each flank dan three in the central incision. A rubber drainage tube was also introduced, covered with gauze, to the bottom of the pelvis. A Mixter tube was then tied into the cecum, which was drawn to the umbilicus for this purpose and the wounds were partially united with silkworm gut. The patient stood the operation well, and was at no time in an alarming condition of collapse. The operation consumed less than forty minutes.

After the operation the drainage tube was emptied by a catheter and suction syringe, at intervals of every half hour in the day and every two hours at night. One to two drachms of fluid were usually obtained during the first week. On the day after operation an enema through the colostomy tube was followed by a good result. The patient was fed on nutrient enemata until the 9th day, when small doses of milk and lime water were allowed. On the sixth day all of the wicks and the rubber drainage tube had been removed, and the Mixter tube had come away, leaving a fecal fistula. On the thirteenth day the wound was drawn together with straps, and in two weeks the fistula had closed. At the present time, just over three months after the operation, the wound is solid and the patient is eating well and feels in perfect health.

INJURY OF INTESTINE; OPERATION; RECOVERY.

CASE III. P. S. (hospital No. 411-199), a hostler, fifty-eight years of age, was brought to the hospital on Aug. 28, 1902, in the afternoon, and entered the serviice of Dr. S. J. Mixter, by whose permission I report the case. The history was as follows: Previous history of a negative character; an hour and a half before entrance the patient was kicked in the abdomen by a horse. He apparently did not lose consciousness, but fell and was unable to rise and suffered excruciating pain.

On examination there was found a man of large frame and well nourished, face pale and with an anxious expression, moist with perspiration. Pulse of 84, of good quality and medium tension. Temperature 98.2. Respiration 22, shallow and chiefly costal. Lungs negative. Heart not enlarged, soft systolic murmur at base, not transmitted. The abdomen was markedly retracted in upper portion and of boardlike rigidity. This was most marked in the upper left portion of the left rectus muscle, which was so retracted as to form a transverse depression. There was a small area of shifting dullness in the left flank. Tenderness was present over the whole abdomen, becoming exquisite in left upper quadrant. Rectal examination was negative. Urine drawn by catheter was normal. Patient vomited undigested food after entrance; no blood. Liver dullness not diminished. Leucocytosis of 19,000. The diagnosis of probable injury to the intestine was made by the absence of signs of hemorrhage and the extreme rigidity of the abdomen.

Operation three hours after injury by Dr. R. B. Greenough; ether. A median incision six inches long was made from ensiform to umbilicus. Turbid fluid escaped and blood stained omentum presented. A culture of this fluid showed the presence of a mixed growth of bacilli, cocci, diplococci and streptococci. On exploration of the entire intestinal tract, the following lesions were found: There was extravasated blood in the omentum. There was a tear two and a half inches long in the transverse meso-colon, perpendicular to the gut, and not involving any large vessels. The anterior surface of the transverse colon was denuded of peritoneum over an area of one and a half by three inches, leaving apparently uninjured muscle exposed. At a point about ten feet from the duodenum the jejunum presented a transverse tear through all its coats on the side opposite to the mesentery. This tear involved about one-half the circumference of the gut, and from it liquid feces were escaping into the peritoneal cavity. A punctured wound of small size, extending only through the peritoneal and muscular coat, was found at the junction of jejunum and duodenum. The peritoneum was dull and covered with fibrin flakes in several regions, most marked at the position of the tear in the jejunum. The torn jejunum was sutured with continuous catgut, which was reinforced by two rows of silk Lembert stitches. The slit in the meso-colon was closed with a continuous catgut stitch. The rent in the peritoneal coat of the colon and the punctured wound in the duodenum were closed with continuous silk stitches. The abdomen was thoroughly irrigated with gallons of hot salt solution, and wicks were placed in contact with the sutured wound of the jejunum and against the weak place in the transverse colon. The wound was then closed with silkworm gut. The patient was under ether about two hours, and was taken to the ward in good condition.

The convalescence of the case was uninterrupted and the temperature did not go above 100. The wicks were removed on the fifth day and the wound closed rapidly by granulation. The patient considers himself in perfect health at the present time, seven and a half months after the injury.

Reports of Societies.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

SEVENTEENTH ANNUAL MEETING, HELD MAY 12, 1903, WASHINGTON, D. C.

(Continued from No. 17, p. 466.)

CONSERVATIVE PERINEAL PROSTATECTOMY. PRESENTATIONS OF NEW INSTRUMENTS AND TECHNIQUE.

DR. HUGH H. YOUNG of Baltimore read this paper, giving a brief résumé of his work and the

problems which presented themselves to him. The principal objection to the perineal route was the necessity of the suprapubic incision to push the prostate down into the perineum where it could be enucleated. After several months of experiment he had constructed an instrument which could be used from below to draw down the prostate. It consisted of two fenestrated blades attached to shafts, one of which revolved around the other. When the two handles near the outer end, which regulated the rotation, were brought together, the blades were approximated and in position for insertion into the bladder through the opening in the membranous urethra. Once introduced above the intravesical limits of the prostatic lobes, the blades could be made to separate by rotating the external blades away from each other, when the instrument would be ready for any traction on its shaft that was necessary to drag down the prostate well into the perineal wound. The fact that many of the cases requiring prostatectomy were vigorous men in the fifties, with sexual powers well preserved, rendered it important that nothing should be done to injure their manly vigor, and care should be taken not to injure or remove the ejaculatory ducts. Evidence of injury to these ducts was that Petit reported that twelve cases in thirty suffered with epididymitis after the Albarron operation. The doctor then presented some drawings which showed the position of the ejaculatory ducts and vesicles, and stated that their position depended largely upon the character, size and disposition of the enlargements. As a result of his study of the course of the ejaculatory ducts, he summarized as follows: In the normal prostate the ejaculatory ducts lie for the most part just beneath the posterior capsule, considerably below the level of the vesical neck, and were separated from it by the pre-spermatic group of glands. In the hypertrophied prostate the same statements were true, the only difference being that the ducts enter relatively lower down, and the vesical neck was separated from them by much more tissue, especially if the pre-spermatic group of glands have taken on growth with the resulting median lobe enlargement, when the vesical orifice was lifted high up above the level of the ducts. The prostatic tissue immediately adjacent to the ducts was beneath the urethra, and played no part in the obstruction, which was caused entirely by the lateral and median enlargements, both of which were well above the ejaculatory ducts.

Technique of operation. — He considered the exaggerated dorsal lithotomy position the most satisfactory. The perineum should be elevated until it was almost parallel with the floor. He used the median perineum incision, about 6 cm. in length, the posterior limit being quite near the anus in thin patients; if the patient be large, with the prostate situated deeply, he generally used the inverted "V"-shaped incision. The apex of this incision was just over the posterior part of the bulb, and the two branches were each 5 cm. long, the posterior limit being about midway between the anus and ischial tuberosity. After exposing the superficial muscles by blunt dissection, the central tendon was caught by a clamp near the bulb and divided. This at once freed the sphincter and the levator ani from the anterior attachment, and exposed the rectum drawn forward by the recto-urethralis muscle. In order to reach the membranous urethra and the apex of the prostate this muscle should be divided. This at once exposes the "*espace decollable retroprostatique*," so well described by Proust. When this muscle was divided the rectum dropped back and one entered the space surrounding the posterior surface of the prostate. Next the membranous urethra was opened upon a sound, and a sound of considerable size passed through the incision into the prostatic urethra and bladder. Then the prostatic retractor, already described, was inserted; so soon as the beak was free in the vesical cavity the thumb screw which fixed the blades in position was loosened, the blades rotated 180° by means of the external blades, and then was fixed by tightening the thumb screws. Each blade projected laterally so as to engage the intravesical surface of the lateral lobe. As a result of this a splendid exposure of the entire posterior surface of the prostate was obtained. Next an incision was made on either side of the median line for almost the entire length of the posterior surface of the prostate and about 1 cm. deep; the two lines should be convergent. The bridge of tissue which was contained between the two incisions contained the ejaculatory ducts, whose preservation was of the utmost importance.

Enucleation of the lobes. — He believed the separation of the capsule from the lateral lobes was best done with a blunt dissector. Capsules were of varying thickess and contained several layers of cleavage. It was important to start not too deeply, going into the prostatic substance, nor too superficially, so as to be outside most of the capsule. After the stripping up process had been started correctly it was easily continued by blunt dissectors until first the lateral and then the anterior surface of the lateral lobes had been freed from the capsule. Internal enucleation required considerable care to prevent tearing into the urethra. When the enucleation of the lateral lobe had progressed fairly well on each side, he found it advantageous to have traction made upon the prostate itself, in order to facilitate the separation of the deeper portion. He devised a pair of fenestrated instruments which could grasp the entire lobe, and which presented such broad surfaces that no tearing or cutting of the capsule could result. After shelling out the lateral lobes, attention should be directed to the median portion of the prostate. The prostatic retractor can be used now with great advantage, and should be handled as follows: Push the retractor backward until it is free in the bladder cavity; depress the handle so that the shaft can be on top of the

middle lobe; rotate the instrument 90° so that one of the blades will project downward behind it. After the median lobe has presented in the left intracapsular cavity, it can be readily and rapidly enucleated. By this technique he said that he had been able to enucleate several median hypertrophies and without tearing the mucous covering. Abundant vesical drainage should be provided for, as a small tube may easily become plugged by blood clots and cause great annoyance. He deemed it advisable to keep up continuous irrigations while the patient was being returned to his room, so as to prevent clogging of the drainage tube with blood clots during transit.

After treatment. — If the patient had a cystitis, and such patients usually do have, a continuous irrigation of the bladder was kept up, often for a week, and with great benefit to the vesical inflammation. A submammary infusion of 1,000 cc. salt solution was given either on the operating table or after return to bed. This prevented both shock and anuria, and was also a cure for the post-operative thirst. At the end of a week in bed the drainage tubes were withdrawn. After passing a catheter on the ninth day it was held there by straps. Permanent drainage was maintained for five days, the bladder being irrigated twice daily with boric solution. He had never had a stricture following this operation.

Results. — He had now operated upon twelve cases with the prostatic retractor, and generally by the technique described. All these cases were living and well. All could empty their bladders completely, and none used the catheter. Incontinence of urine had never been more than a temporary affair, and the perineal fistula had closed in all, except the recent cases. One case, sixty-nine years old, with a tremendous prostate, who had led a catheter life for ten years, was now, seven weeks after the operation, voiding urine at intervals of from three to five hours. He had determined that the power of erection was present, that ejaculation was apparently normal, and that the semen obtained by ejaculation contained actively motile spermatozoa and the lecothin bodies found in normal prostatic secretions. Their presence showed that the bridge of prostatic tissue surrounding the ejaculatory ducts was furnishing a part of the fluid ejaculated. This was possibly of great importance, as it was supposed that without the mixture of prostatic secretion, the spermatozoa were non-motile and apparently lifeless. It was possible that only a very small amount of prostatic secretion was necessary to vivify the spermatozoa. He said that although a longer period of time must elapse before the effects of the operation can be thoroughly realized, he felt convinced from the cases already studied that the sexual powers would be perfectly preserved, and that the ability of these men to procreate would remain unchanged. The instrument which he called his "prostatic retractor" had transformed the operation of prostatectomy for him. Now, with its use, the entire field was cleared, the operation was performed in a shallow wound accurately under visual control, proper regard being now made to the urethra and the ejaculatory ducts.

DR. RAMON GUITERAS of New York showed some plates demonstrating his operation of perineal prostatectomy.

DR. EDWIN C. BURNETT of St. Louis did not believe that tearing or severing the ejaculatory ducts would always interfere with the sexual power so far as erections were concerned. At a meeting at Niagara Falls last year he reported a case of division of the ejaculatory ducts done upon a child when four years of age; this occurred during an operation for stone. When this child grew to manhood he had perfect virility with normal erections, and the only thing abnormal was the fact that he never had an ejaculation.

DR. ARTHUR T. CABOT of Boston expressed much admiration for the operation as performed by Dr. Young, which removed an objection to the perineal operation, the injury to the ejaculatory ducts, which so often happened by other methods.

DR. HUGH H. YOUNG of Baltimore said that in a case he operated upon five or six years ago, doing the Alexander operation, he removed two enormous lobes of the prostate and severed the ejaculatory ducts, yet that man afterwards was able to have an ejaculation.

SECOND DAY — MAY 13.

ACUTE VESICULITIS — ESPECIALLY TREATMENT.

DR. JAMES P. TUTTLE of New York read this paper. The chief object of his paper was a prophylactic one, to call attention to the harm often done to the rectum by unwise efforts to treat vesiculitis through that organ. He said that the onset of acute vesiculitis was usually in the course of an acute posterior urethritis. It might be due to gonorrhea, colon bacillus, tubercular or simple pus infection. It had been rare, in his experience, in those cases which had not been subjected to instrumentation or forcible irrigation of the posterior urethra. It seemed possible to him that the hydrostatic pressure exerted by the Valentine method on the deep urethra in cases of spasm of the neck of the bladder might easily distend the ducts and carry the infectious secretions up towards the vesicles. The disease may come from other causes than gonorrhea. Aside from the painful erections and emissions, frequent and straining efforts at urination and sometimes retention of urine, most of the symptoms were referred to the perineum and rectum. There usually occurred aching in the sacrum and pelvis, rectal tenesmus, pain on defecation, shooting down the legs into the testicles and to the end of the penis, just as was often found in ulcer of the rectum. Diagnosis could only be made by an examination through the rectum, and this was best made with the patient in the knee-chest position and with the bladder moderately filled with urine. The finger in the rectum could then make out

an unusual heat, tenderness, swollen irregular masses leading upward and outward from the lateral lobes of the prostate. Usually the prostate was swollen and tender.

Treatment. — After experimenting very largely he found that, in all such conditions requiring prolonged irrigations, two soft catheters of rubber were more satisfactory than the metal irrigators. In the very early stages cold water gradually lowering the temperature from 90° to 50° by putting ice in the reservoir after the flow had begun was best. The bag should not be so high as to cause a forcible injection of the fluid. Prolonged rather than intense cold was to be desired. After the acute symptoms had subsided, one should change from cold to heat, but one should be careful not to raise the heat too high; 110 to 115° F. was as hot as the water should ever be. To this he advised the adding ½ to 2% hydrastis. When the swelling and pain persisted, irrigations over the vesicles through the rectal speculum gave great relief, and would often start up resolution when nothing else would. Temperature was best reduced by the application of guaiacol along the course of the vas deferens. Pain was best relieved by aconite or acetanilid, or phenacetin. Opium should be avoided on account of its constipating effects. Frequent rectal examinations should be avoided. Hydrastis and ergot internally had good effects in chronic conditions.

Dr. Eugene Fuller of New York emphasized the importance of rest, with elevation of the hips, the use of the bed pan, enemata, etc., in the treatment of acute vesiculitis. If such a treatment be pursued, few cases will run on to a chronic conditon.

Dr. George K. Swinburne of New York deprecated the use of forcible urethral irrigations. He used urethral irrigations a great deal, and had never had a case of acute urethritis or prostatic abscess or other bad result from its use because he never used force, and so avoided distending the urethra too much. In acute vesiculitis he had used the Chetwood tube with pleasing results.

A FURTHER REPORT ON THE AUTHOR'S METHOD OF EXPOSING AND DRAINING THE SEMINAL VESICLES.

Dr. Eugene Fuller of New York read this paper. He reviewed this former paper read before the New York County Medical Association and published in the *Journal of the American Medical Association*, May 4, 1901, entitled "A New Operative Method to Expose the Seminal Vesicles and Prostate for the Purpose of Extirpation and Drainage, — a Preliminary Report." In order to facilitate an accurate dissection through the soft, elastic and yielding perineal and pelvic structures, they should be made to assume as stable a position as possible, and that could only be accomplished by making them taut. To accomplish this the patient with his thighs sharply flexed was put belly downward on a Trendelenburg table, the buttocks protruding somewhat over the end, while the flexed thighs straddle the table. The end of the table was then inclined upward quite sharply. The body was maintained in this position by sand bags, strappings and the attention of attendants. An antiseptic lubricated cotton tampon, with a tape attached, was pushed into the previously cleansed rectum, well up into the region of the sigmoid, in order to guard against bowel leakage. No catheter was necessary or advisable, as in the Von Dittel operation, but the bladder emptied before the administration of the anesthetic. The external incision consisted of two somewhat converging longitudinal cuts, which were connected at their dependent and proximal extremities by a transverse cut. The longitudinal cut to the operator's right began a little above the patient's coccyx and just inside his right ischium, and extended downward and slightly inward, keeping just within the border of that bone, passing the tuber ischii and ending somewhat below that tuberosity at a point laterally and about three-fourths of an inch anteriorly to the anterior margin of the anus. The longitudinal cut to the operator's left corresponded exactly to the one just described. The transverse cut connected the converging ends, dividing the perineum transversely about three-fourths of an inch anterior to the anterior margin of the anus. He incised deeply along the longitudinal cuts, through the fatty tissue of the ischiorectal space, and divided above a few of the lower fibers of the glutens maximus muscle. The transverse cut was then deepened, the anterior layer of the deep fascia being cut through. Great care was taken to avoid wounding the sphincter muscle. The forefinger of the operator's left hand was next introduced into the rectum, the ball of the tip turned downward against the anterior rectal wall, while the corresponding thumb pressed against the loosely dissected rectum, the hand at the same time exercised upward traction. With the right hand the operator dissected more deeply, cutting through the levator ani muscle and the visceral layer of the pelvic fascia. The pathway of dissection between the urethra and the rectal wall was very narrow, and the forefinger in the rectum acted as a most important guide. The stroke of the knife was inward and toward the rectal wall. The tip of the finger was moved so that it was just behind the portion of the rectal wall where the dissection was being made. This protected against perforation of the rectal wall, and the urethra escaped damage. In case the lower portion of the lateral incisions have not been made deep enough to sever the levator ani muscle, they can now be made so. Next the operator's right forefinger was inserted along the dissection and kept just below the rectal wall until it passed through the cut in the visceral layer of the pelvic fascia, and entered the lymph space which lies between the prostate and the rectal wall. When this space was reached the left forefinger was passed in alongside the right, and the path of the wound divulsed by separat-

ing the fingers. By this process the loose rectal connections were stripped from the seminal vesicles and posterior bladder wall, leaving those parts exposed to direct surgical attack. The operation having been completed for which the incision was made, the walls of the wound were carefully adjusted by deep sutures, so as to bring the rectum back into its orignial position. A space for gauze packing was left in the middle portion of the transverse cut. If the sutures around the rectal portion of the wound were not deep, so as to allow the sphincter to become firmly attached to the outlying structures, some tendency to rectal prolapse might eventually develop. Temporary retention of urine was apt to develop, especially where considerable gauze packing was left, connecting the deep track of the wound with the surface. As the tissues in these parts were well nourished, first intention was the rule. This operation rendered direct surgical attack feasible in many rebellious forms of seminal vesicular disease, which were formerly left unaided, or which have responded unsatisfactorily to palliative measures. He did not recommend the operation in tubercular seminal vesiculitis. He found this method of reaching and draining deep suppurations either about the seminal vesicles or prostate most satisfactory. If the abscess was back of the prostate his operation avoided injuring that gland or the ejaculatory ducts. He always feared the operation per rectum, lest bowel leakage into the tissues might give trouble, or in case of an abscess just on the verge of spontaneously discharging itself into the bladder, a vesico-rectal fistula might persist. No surgical objections could be raised against the drainage of suppuration by his method, since the dissection employed reached the focus of trouble without injury to any of the adjacent organs. Speedy and safe convalescence ensued, and there was little or no danger of subsequent complications. The only objection to the operation was that it required more skill than a cystotomy, with incision through the trigonum or an incision through the rectum.

DR. JAMES P. TUTTLE of New York, in order to prevent any contamination of the operative field by the rectal contents, recommended that a metal ring with a groove running around it, with four holes in it, be employed in this way: An ordinary condon should first be tied around the groove in the metal ring, which is then fastened just inside the anal margin. The condon is then inverted, and this would prevent the feces coming down as well as protect the surgeon's hand from the fecal contents.

DR. HUGH H. YOUNG of Baltimore believed that too much attention was paid to the vesicles and not enough to the prostate. He said that a chronic prostatitis was more difficult to cure than a chronic vesiculitis, and that it happened very often a cure of both resulted from attention being paid alone to the chronic prostatitis.

DR. E. L. KEYES, JR., of New York always had fancied that a rectal incision was adequate to take care of that kind of cases; he had never found the dangers of infection increased by an incision through the rectum, which was a simpler matter than going through the perineum. He related an instructive instance occurring in a man who was in catheter life. He was called to the country to open an abscess, the incision being made through the rectum. Before operating there was no pus in the urine, but after the operation it became loaded with pus. The parts were irrigated with boric acid solution for eight or ten weeks, and he was reported to be no better. He was still passing urine through his rectum. The irrigation was stopped and, six weeks later, the hole closed and remained closed.

DR. EUGENE FULLER of New York said he had never had infection from the rectum from following the method of operating advocated, but thought the suggestion of Dr. Tuttle a good one. He believed that a greater effort should be made to differentiate between diseases of the prostate and those of the vesicles. He thought the time would soon come when more would be done for such sufferers by operative procedures. One of the dangers of opening through the rectum was from the urine, and an operation which avoided such a possibility would be better than when we obtained drainage elsewhere.

DR. E. L. KEYES, JR., wished it to be understood that he referred only to cases of well-defined perivesicular abscesses when he advocated a rectal incision for drainage.

A VESICAL CALCULUS OF UNUSUAL DIMENSIONS.

DR. ABNER POST of Boston presented this unusual specimen. The patient was a man sixty-six years old. He dated the beginning of his trouble from a urethral hemorrhage which he believed occurred fourteen years ago. Since then he had had almost constant discomfort and frequent micturition. For some time he had been compelled to get up every hour of the night to pass his urine. Sometimes his urine would not come until he had raised his leg. It was evident when the doctor first saw him that he had a stone, the removal of which would relieve him of his symptoms. Suprapubic cystotomy was performed, and the immense stone was disclosed. It filled the entire vesical cavity. With much difficulty the stone was removed from its bed. To gain sufficient room it was found necessary to divide the recti muscles and to make a transverse incision on each side. The stone weighed 660 gm. It was $11\frac{3}{4}$ in its longest diameter and $10\frac{3}{8}$ inches in its shorter. The pathologist reported that it consisted chiefly of phosphate of calcium and triple phosphates, with some carbonate of lime and organized débris. The largest vesical calculus on record was said to be in the possession of the French lithotomist, Morand. It weighed 6 pounds and 3 oz. An enormous stone weighing 51 oz. was long preserved in the hospital of La Charité, Paris. It was extracted after death from the bladder of a poor curate in 1690. Coulson, "On the Bladder and Prostate," said: "The largest calculus

preserved in our collections is the one which Mr. Cline attempted to extract from the bladder of Sir William Ogilvie; it weighed 44 oz., and was 16 inches round one axis by 14 round the other. Numerous cases are recorded where the stone weighed from 5 to 15 or 20 oz., but how small a proportion they bear to the mass of cases operated on may be gathered from the fact that, of the 703 calculi in the Norwich collection, weighed by Mr. Crosse, only two exceeded 6 oz. in weight, and they were between 6 and 7 oz."

Dr. Hugh H. Young of Baltimore said that from a book he had in his possession he learned that Sir William Ogilvie for five years had found it necessary to stand on his hands or back up against a wall in order to urinate; in this way the urine flowed over the top of the stone. The attempt at perineal lithotomy was made in 1816 before the days of anesthesia. It was stated that Sir William bore the operation with great fortitude. With supplies from a blacksmith, a chisel and hammer, etc., 5 oz. of the stone were removed, and then Sir William could stand it no longer. The calculus was now in the Museum of the College of Physicians and Surgeons, and had the marks of the work done upon it during the operation, showing where a hole had been gouged out. Last year Dr. Young had seen two calculi which filled the bladder and prostatic urethra, and were practically as big as the one presented by Dr. Post.

(To be continued.)

Recent Literature.

A Laboratory Text-Book of Embryology. By C. S. Minot, S.D., LL.D., D.Sc. xvii + 380 pp. 218 illustrations. Philadelphia: P. Blakiston's Son & Co. 1903.

Embryology has received such scant recognition in most American medical schools that the majority of teachers of this subject have been forced to devise means for getting the most out of the limited opportunities given them. From this standpoint an excellent body of concise information and of laboratory directions has been brought together by Professor Minot in this "Laboratory Text-book of Embryology." The volume opens with a chapter on the general conceptions of embryology, such as a comparison of the larval and the embryonic types of development, the germ layers, theories of heredity, law of recapitulation, etc. This is followed by an account of the early development of mammals, by which the student is led to a consideration of the human embryo. The chapter on the human embryo is supplemented by chapters on the development of the pig, chick and rabbit, and the volume is concluded with an account of the uterus and fetal appendages in man, and directions for laboratory manipulation.

The novel feature in the treatment of the subject, and one that will attract the attention of teachers, is the attempt to describe the anatomy of the more important stages of developing embryos on the basis of a few well-selected sections in the three planes: transverse, sagittal and frontal. Although this method acquaints the student with the structural relations in only a few planes in the embryo body, it must be confessed that Dr. Minot has been unusually successful in selecting the very best sections and in supplementing them with some remarkably clear and beautiful perspective drawings of solid reconstructions. The method here outlined gives evidence of the work of the experienced teacher, and is carried out with such rare insight as to the precise requirements of the case that its success seems assured.

The illustrations, text as well as plates, represent with remarkable fidelity the natural appearances of the objects from which they are taken. Many of them are indeed works of art, and fully equal the best embryological reproductions hitherto published. The letter-press is remarkably clear, and in Dr. Minot's well-known scholarly style. Embryologists are responsible for a fair share of verbal innovations, and Dr. Minot has kept to this tradition by introducing the verb "to microtome." The word is certainly convenient, though possibly "microtomize" might have been more in accordance with etymological usage.

To the teacher of human embryology the volume is full of suggestions, for it is evidently the outcome of long practical experience, and the school that will instil into its students even a small part of the information contained in Dr. Minot's textbook, and give them even part of the training he implies, will do much in advancing to its proper place the somewhat neglected study of human embryology.

A Text-book of Clinical Anatomy. For Students and Practitioners. By Daniel N. Eisendrath, A.B., M.D., Professor of Clinical Anatomy in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Cook County Hospital, Chicago, etc. Octavo of 515 pages, illustrated with 153 illustrations, a number in colors. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

In his preface the author states that the primary object of his work is to serve as a bridge for both the practitioner and student from descriptive anatomy, as it is usually taught in the first two years of a medical course, to its daily application at the bedside, in the clinic or in the operating room. The term "clinical anatomy" seemed to the author to be the most appropriate one to use to express the larger field which the subject covers. The illustrations, which are very numerous, are for the most part very clear and serviceable, and the majority are original. The book will be found useful by the clinician, whether medical or surgical.

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REPORT OF THE SURGEON-GENERAL OF THE ARMY.

THE annual report of the Surgeon-General of the Army for the year ending June 30, 1903, is before us. The pamphlet, as is usual, contains a very large amount of information on matters of medical interest relating to the army. It is always of interest to the general medical profession to observe how many men appear for appointment in the medical corps of the army. At various times during the last year medical boards for the examination of candidates have been in session in several cities. From the statistics it appears that 176 candidates were examined by these various boards, that 37 were rejected as physically disqualified, that 99 withdrew during the examination or were later rejected, and that but 40 were physically and professionally qualified for appointment in the medical corps.

In spite of the fact that this appears a rather small number of successful candidates, it is shown that the percentage of approved candidates has continued to increase, and this notwithstanding that the high standard of examination has been maintained. It is less encouraging to note that there is a steady loss by resignation of certain of the best-trained young medical officers, for the obvious reason that prospects for advancement are better in civil life than in the army. Surgeon-General O'Reilly believes that, if the medical corps is to be maintained in the highest possible state of efficiency, its functions should be performed by commissioned officers. Civilian physicians under contract are useful and satisfactory so far as strictly professional work is concerned, but their position as officers is wholly anomalous, and should not be further continued to the exclusion of fully commissioned medical officers.

This periodic discussion of the opportunities for medical men in the army, and particularly regarding the social position of contract surgeons, has before been subject of comment in these pages. We are not prepared forthwith even to suggest a remedy for the existing state of affairs, but it is evident to the unprejudiced observer that the position of medical officers, both on its professional and social side, must be made so attractive that not only will the very best men accept the positions offered, but also that they will remain during life in the service. If a certain number of the best of the younger medical men resign from the army, it is sufficient proof that the conditions there are not such as to meet the highest ambition of able professional men. This should in some way be remedied if the medical corps of the army is to maintain the high place in public esteem which it should.

Regarding contract surgeons, it is stated that there were 273 in service at the close of the fiscal year ending June 30, 1902, and that there remained in service June 30, 1903, 229. Few contracts have been made, except with men the character of whose work was known to be of proved value, and by far the larger number of these are on duty in the Philippines. The number now in service will be still further reduced in the near future.

In February, 1901, Congress approved the appointment of thirty contract dental surgeons. By June 30, 1903, the full complement permitted by law was made. The number of officers, enlisted men, nurses and prisoners of the army treated during the year from Jan. 1, 1902, to Dec. 31, 1902, was 16,161, being 20% of the mean strength of the entire army. This fact alone is sufficient to justify and to continue the improvement of this department of the medical work of the army. It has been shown that dental and oral disease among troops is very common, and it is evident that if perfect health is to be maintained, defects in the teeth as they arise should be properly attended to. Measures are being taken to instruct enlisted men as to proper methods of caring for the teeth and mouth, which should do something towards diminishing the number of cases requiring treatment.

In considering the prevalence of special diseases in the army a large amount of space is given to the always interesting subjects of ty-

phoid fever and malaria. The army offers peculiar opportunities for the study of such a disease as typhoid fever, and the report before us is interesting in this connection, since it traces out with a considerable degree of care the source of various epidemics, together with statistics which should be of general medical value. In the discussion of malaria there is also much of interest, and the whole subject is approached from a modern, scientific standpoint with adequate pathological detail. Tuberculosis naturally claims its victims, and it is interesting to note that the troops in the Philippines now show the greatest prevalence of the disease. No cases of pulmonary tuberculosis are now treated at post hospitals in the United States if it is possible to transport them to the general hospital at Fort Bayard, New Mexico. This gives not only the patient himself the best opportunity for recovery, but also frees his companions from the possible danger of contagion.

In general we find this report, as we have previous ones, worthy of serious reading and study. It offers certain statistics regarding disease, particularly in epidemic form, which are difficult to obtain from other sources. The medical problems connected with an army, or with large groups of persons collected under the same hygienic conditions, are far from being solved, and each published report of the work done by our army medical officers tends at least to simplify the problems which it remains for the future to answer completely.

A YEAR'S MEDICAL BOOK PRODUCTION.

In the current number of the *Medical Library and Historical Journal* is an interesting statistical study of the medical book production of one year, the period covered being from Oct. 1, 1902, to Oct. 1, 1903. In compiling these statistics, serial publications of all sorts, including transactions, year books, government reports, etc., together with graduating theses, have been excluded. With these exceptions the list given is practically a complete record of medical books published during that year. The results afford much food for reflection.

It appears that new books published in America number 367; in England, 250; in France, 288; in Germany, 354; with 25 scattering. In addition to these, 382 new editions were published, making a total of 1,666 new books and new editions. The average price of these books was $1.92 a volume, the American books being on an average the most expensive. In percentages it appears that, including new books and new editions, America leads the list with 30%, Germany following closely with 29%.

A further analysis of these statistics demonstrates the fact that America leads the world in the production of medical books, and that half the medical books published in the world are in the English language. That the cost of American and English books is somewhat greater than that of French and German publications is explained by the fact that German and Frnech books are usually published unbound. This estimate of books published, as stated above, does not include the vastly greater number of periodicals. which in one sense rightly belong to a year's medical publications. The journal from which we quote is of the opinion that the economic waste in the production of this amount of medical literature is enormous, but suggests that there seems to be no disposition, either by publisher or writer, to check the output.

Certain it is that the production of medical books, particularly in this country, has been phenomenal within the past year, a condition which we strongly suspect is due as much to the zeal of the various excellent publishing houses as to the enthusiasm of the individual writers. Several publishers in this country have on their list of medical books a fairly complete library, and it is apparently their design to be able to offer the reading public a book on practically every important subject connected with medicine. This means that the publishers take an active interest in the production of books, even going so far at times as to solicit authors to write on certain subjects.

This tendency on the whole we regret. It certainly does not express the highest aim of medical or any other sort of literature. At the same time we are inclined to think that the evils of overproduction of medical books are not really great. Medical publications. like literature of other sorts, soon find their level, and that more are produced than are needed does not necessarily reflect upon the profession as a whole. The competition which such prolific book production entails is at any rate useful and stimulating.

DOWIE IN NEW YORK.

What with the general ridicule of the secular press, and the somewhat ponderous analysis and criticism of the medical journals, Dowie and his cult seem to have accomplished a decidedly in-

creased notoriety in their invasion of New York. If that alone is what the "prophet" has been aiming at he has certainly accomplished his end, and we are inclined to suspect that he has had a certain inward satisfaction at the success of his somewhat unusual methods. No one questions his shrewdness and his knowledge of human nature; his material success sufficiently demonstrates this. Where a sincere religious enthusiast might sway the mob by eloquence or the contagion of personal faith, Dowie draws the attention of a vastly greater number of people by vituperation and general vulgarity. It is hardly necessary, as our contemporary, the *New York Medical Journal*, has done, to demonstrate the fact that he is a false prophet. This fortunately is apparent to all outside his immediate following. What is of very great interest, however, to students of such movements is the extraordinary means he apparently deliberately takes to extend his influence. His apparent failure to arouse the dormant moral sense of his hearers has been his chief success. He has in no way appealed to the mob spirit as ordinarily understood; no one apparently seriously believes in his mission of reform, and, we imagine, exceedingly few have been led to better things by his so-called preaching. The abuse with which he has treated his audiences has naturally been thrown back at him with redoubled vehemence, with the final result that the details of his visit to Boston, for example, are treated with almost the minuteness which was accorded the advent of Prince Henry. No doubt he will return to Zion well pleased with his descent on New York, and with the reception he there received. However that may be, we must put him down as a remarkable man of his kind.

MEDICAL NOTES.

THE TUBERCULOSIS WORK AT SARANAC LAKE. — By invitation of the Henry Phipps Institute for the Treatment and Prevention of Tuberculosis, Dr. E. L. Trudeau delivered an address last Saturday in Philadelphia on the "Development of the Tuberculosis Work at Saranac Lake." The address was followed by a reception.

THE MEMORIAL TO PROFESSOR VIRCHOW. — The German committee appointed to secure a memorial to the late Professor Virchow has issued a circular, under date of Oct. 13, the anniversary of Virchow's birth, in which they acknowledge previous contributions from abroad and at home to the object which they have at heart, and express the hope that still further and larger contributions will be forthcoming that they may be justified in undertaking the erection of the life-size statue, to be placed in an open street of Berlin in the neighborhood of the site of Virchow's scientific activity, as a permanent memorial to this distinguished teacher, investigator and statesman. Contributions can be sent to the banking house of Mendelssohn & Co., Berlin.

AWARD OF A NOBEL PRIZE. — It is reported from London that Professor Finsen of Denmark has been selected as the recipient of the Nobel prize in the section of medicine.

THE ENNO SANDER PRIZE. — The subject of the competition for this prize for 1904 is "The Relation of the Medical Department to the Health of Armies." The essayist receiving the first place will be given a gold medal valued at one hundred dollors; the essayist securing second place becomes a life member in the Association of Military Surgeons. Competition is open to all persons eligible to active or associate membership in the Association of Military Surgeons of the United States. Essays will consist of not less than 10,000 nor more than 12,000 words, exclusive of tables, and must be submitted on or before Sept. 10, 1904. Further information regarding the conditions may be obtained from Dr. James Evelyn Pilcher, Carlisle, Pa.

A NEW MEDICAL JOURNAL. — It is announced that a new journal, to be known as *The Journal of Infectious Diseases*, will begin publication Jan. 1, 1904. The journal is to be published in connection with the Memorial Institute for Infectious Diseases in Chicago, and is to be under the editorship of Drs. Ludvig Hektoen and Edwin O. Jordan. The object is to publish original investigations dealing with infectious disease and to include in its pages only such contributions as bear with reasonable directness upon this general topic. Attention will be given to prompt publication, and numbers will be issued at irregular intervals as material permits. Conditions of publication are such that the permanence of the journal is assured, as well as the adequate presentation of material submitted.

ALVARENGA PRIZE FOR 1903. — The Alvarenga Prize for 1903 has been awarded to Dr. William S. Carter of Galveston, Texas, for his essay entitled "The Relation of the Parathyroids to the Thyroid Glands."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 28, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 73, scarlatina 19, typhoid fever 29, measles 74, smallpox 1.

Bequest to a Hospital. — By the will of the late Mary Putnam Ropes of Salem, the Salem, Mass., Hospital receives the sum of $5,000. This bequest, however, will not become available until the death of her sister.

George Haven, M.D. — The Senior Staff of the Boston City Hospital passed the following resolutions at a meeting held Oct. 19:

"The Staff of the Boston City Hospital desires to record its deep regret at the death of Dr. George Haven. Appointed to the Out-Patient Department in 1889 and later to the position of Junior Visiting Physician for Diseases of Women, he served the hospital with ability for fourteen years.

"With a strong and attractive personality he combined the qualities which compel professional success. Tactful, patient and tireless, a good diagnostician, a skillful operator and a wise counsellor, he gave unsparingly to his patients of the best which was in him."

NEW YORK.

Euthanasia. — At the annual banquet of the New York State Medical Association on Oct. 21, one of the speakers, the Rev. Merle St. Clair Wright of the Lenox Avenue Unitarian Church, attracted considerable attention by advocating euthanasia for hopeless sufferers from disease or injury. In the course of his remarks he said: "I appreciate the practical difficulties in the way of the practical application of the doctrine, but it seems to me that it is not beyond the bounds of possibility. Of course it would be necessary to have the advice and approval of men of the highest scientific attainment. The city might be divided into districts, and every application should be considered most carefully, not merely by physicians, but by some eminent clergymen selected for the purpose. And, of course, there should be the consent of relatives and the consent, even the request, of the patient himself. But where all these conditions are fulfilled, and where the prolongation of life is simply the prolongation of hopeless agony, it seems to me that it would be proper that such a patient should quietly, decently, modestly, be allowed to end the sufferings. It seems to me that such a course would be a step forward in civilization and a step further away from barbarism." Other speakers were John S. Wise, Esq., and Dr. Algernon T. Bristow, President of the Medical Society of the State of New York.

Religious Service for Physicians. — On St. Luke's Day, Sunday, Oct. 18, a special religious service for physicians and medical students was held at Calvary Protestant Episcopal Church, and Bishop Potter officiated, assisted by several clergymen. The Scripture lesson, which was read by a medical man, Dr. D. B. St. John Roosa, was the chapter from Ecclesiasticus in the Apochrypha, which contains the well-known passage commencing: "Honor the physician for the need thou hast of him; for the Most High hath created him." On this occasion addresses were made by Bishop Potter and Prof. William H. Thomson.

A Dentist Sues Shah's Brother. — Dr. M. Wagschal, a New York dentist, has commenced proceedings against Prince Zille Sultan, a brother of the Shah of Persia, for a claim which would apparently seem somewhat difficult to realize upon. When in Persia, some time since, he was called upon to operate upon the mouth of this august personage, and the prince was so much pleased with his services that he made a contract with him, according him the privilege of practicing his profession wherever he liked upon the condition that he should attend on the prince whenever the latter had need of him. In consideration of his thus holding himself to come whenever he was summoned, the dentist was to receive a regular salary of 200 toman a year. He states that he was obliged to leave Persia after the assassination of the shah, but has always kept the prince aware of his whereabouts, so that he might be summoned whenever his professional services were required. For a considerable time past, however, the prince has neglected to pay his salary, and now owes him 1,600 toman, or $2,400 in American money. The contract is in Persian and bears the prince's seal, which is described as "resembling a bird's-eye view of a labyrinth, disarranged by an earthquake." This has been placed in the hands of Dr. Wagschal's attorney, who, after getting a judgment in the local courts, proposes to place the matter in charge of the American consul, and, if the latter cannot collect, to submit the claim to the Arbitration Court at the Hague.

Obituary.

IN MEMORIAM — JOSEPH P. OLIVER, M.D.

THE sudden death of Dr. Oliver in Paris, France, Sept. 11, 1903, although not wholly unexpected to those who knew him best, represents to many a loss nearly irreparable. For several years he had suffered from angina pectoris, the attacks of which had gradually increased in frequency and severity. He continued, nevertheless, to care for his patients with such constancy and equanimity that but few were aware that the physician often was more of a sufferer than the one seeking relief.

Dr. Oliver was born in Boston, March 28, 1845. Previous to engaging in the study of medicine he was employed for a few years in an important brokerage office. He soon became convinced that a mercantile career was distasteful to him, and found in the pursuit of medicine abundant opportunities for the use of the talents with which he was exceptionally gifted.

He was graduated from the Harvard Medical School in 1871. Before beginning the practice of medicine in Boston he served for a year as medical house pupil in the Massachusetts General Hospital, and continued his studies for another year in Europe.

Never of robust health, of a sensitive, delicate organization, he was enabled by a fineness of temper and strength of will to endure the stress of a remarkably busy and eventful life without signs of serious illness until nearly the close of his days.

Gentleness of disposition was one of his prominent characteristics, directly inherited from a loving mother, whose life was a constant exemplification of this charming quality. His early family ties were intimately connected with a large and happy family of growing children, to whom he was more brother and friend than uncle. The experience thus acquired was of the greatest value in enabling him to appreciate the child's point of view, and to attain that skill in the treatment of sick children which was one of the corner-stones of his success as family physician. He early became recognized as an authority in the diseases of infancy and of childhood, and was an instructor in the diseases of children at the Harvard Medical School from 1875 to 1884. During this period he served also as physician to the Boston Dispensary and to the Children's Hospital. He remained connected with the latter institution as consulting physician during the rest of his life.

His fondness for family practice, and the increasing demands of an exceptionally large and influential circle of patients, led him to resign the positions of teacher and of visiting hospital physician for the purpose of devoting himself wholly to the interests of his patients. For years it was his custom to spend his summer vacations in Europe, partly for study and partly for rest and recreation. He thus became a well-known visitor to the leading health resorts of the Continent, and acquired a personal knowledge of the advantages claimed for the various spas, of the comparative merits of the local physicians and of the experiences of their patients. In consequence he was widely known as an authority in such matters, and his advice frequently was sought by his colleagues as well as by his patients.

The qualities which especially distinguished Dr. Oliver, in addition to the gentleness of nature and refinement of disposition, were a warmth of sympathy, uniformity of courtesy, and tact beyond reproach. He was more interested in the practice of medicine than in medical science, and the former became to him an art in the use of which he was pre-eminent. "We need," said one of the ablest of the teachers of the Harvard Medical School, "some such man as Dr. Oliver to teach students how to pratice medicine successfully."

Through his skill, sympathy and almost feminine instinct, his opinion and advice were always a comfort and a consolation if not a more enduring relief. He was, above all else, the beloved physician, gratefully remembered by the distressed mother and by the anxious father. He was welcomed with open arms by the younger of his patients, and depended upon for counsel and relief by the busied man of affairs. Among his patients were the leaders in thought and action in the various professions and in mercantile pursuits, but among the many patients in waiting were those less fortunate who always found a friend in deed as well as a physician for their need. His charity, however, was known only to himself and those privileged to receive it.

The indebtedness of physicians to Dr. Oliver for information with regard to subjects in which he was particularly informed already has been stated. A word should be added relative to the especial obligation of a number of his younger colleagues whose ultimate success has been attained in considerable part through the aid and encouragement given them by Dr. Oliver during the early part of their career. It gave him the greatest satisfaction to follow their progress and to realize that his influence had helped in advancing it.

Beloved physician and enduring friend, unselfish in his devotion to others — may he rest in peace.

Miscellany.

WORK OF NEW YORK TENEMENT HOUSE DEPARTMENT.

A STATEMENT in regard to the work of this department recently published by the secretary of the Charity Organization Society is of interest. In it he says: "The Tenement House Department is unique in municipal administration. So far as the interiors of the houses in which the bulk of the people live are concerned, it virtually is the Health Department. Sanitary inspection, the correction of unsanitary conditions and the vacating of buildings unsuit-

able for human habitation devolve upon it. It brings about the improvements in housing conditions upon which result less sickness, a lower death-rate, greater decency and a nearer approach in many other ways to rational family and home life. When the tenement-house law was passed it was predicted that all building of tenement houses in New York would cease because of the radical changes made by the law. After the law had been in operation a short time, it was found that builders were making greater profits under it than they had made under the old law, and some of its bitterest opponents soon became its warmest supporters. . . . The new-law tenements have proved successful from the tenants' point of view because for the first time many tenants have been able to get apartments with light, air and sanitary conveniences. They have been successful from the landlord's point of view because they have been fully occupied from the time of completion at remunerative rents. The whole lower East Side is being rapidly rebuilt with new-law houses. . . . Under the steady pressure of competition, the demands of business resulting in the replacing of some of the worst of the old buildings by warehouses, factories, etc., and the operation of the new law, there will gradually come about a complete transformation in those tenement-house conditions which have so long been the despair of all who knew them. There is an immense contrast between the old-law dumb-bell tenements, with their foul 'air shafts,' and the new-law tenements, with their large, ventilated inner courts. No house that is built under the present law contains any room that is not adequately lighted and ventilated. This is in striking contrast to the old-law houses, in which ten rooms out of each fourteen were almost totally dark and without ventilation. . . . Another indication of the activity of the department is that in the first six months of 1903 fire escapes have been erected on 1,701 tenement houses and 3,312 unsafe and dangerous wooden slat floors removed from fire-escape balconies and replaced by proper iron floors." Speaking in regard to prostitution, which was formerly prevalent in tenement houses, Jacob A. Riis, in an address on "The Battle with the Slums," said: "Those conditions have been swept away through the powers given to the Tenement House Department. The owners know that there is a fine of $1,000 if they permit such conditions, and also that there is a commissioner who will enforce the law."

THE COMMUNITY AND TUBERCULOSIS.

Dr. Beverly Robinson, in an article on the above subject,[1] makes the following statement:

"Finally, the broad statement still remains true, that without a susceptible soil no tuberculosis will develop in the vast majority of cases. Witness a little experience of my own. I served thirteen years in the Out-door Department of the New York Hospital, where I had the class either of heart and lungs or throat and nose. During that time I had three or more assistants at different times, and several students. I or my assistants passed at least two hours three times a week in the room where the patients were examined, treated and prescribed for. In no instance that I recall was any one among my assistants or students (of course including myself) known to have contracted tuberculosis, and certainly in no instance was our attention directed to the room of the New York Hospital as being the source and origin of the disease.

"So far as I know, at no time in the thirteen years referred to above was the room where I examined and worked over my cases ever thoroughly disinfected in accord with the notions that we now possess of the meaning of the term. Of course, patients coughed, expectorated and frequently tuberculous sputa reached the floor, dried up and were wafted freely later to the respiratory tract of us all."

[1] Am. Journ. Med. Sci., October, 1903.

THE FOURTH OF JULY AND TETANUS.

At the twenty-ninth annual session of the Mississippi Valley Medical Association, held at Memphis, Oct. 7–9, the following resolutions were adopted:

"In view of the fact that more than four hundred deaths from tetanus occurred following the 4th of July celebration of 1903, as shown by the statistical report elaborated by Dr. S. C. Stanton of Chicago, and published in the *Journal of the American Medical Association* of Aug. 29, 1903, the great majority of which might have been prevented had proper precautions been taken; therefore,

"*Be it Resolved*, That the conclusions which follow, as offered by Dr. Stanton in a paper presented before the association, at the above meeting, be endorsed as the sense of the association, and further

"*Be it Resolved*, That the secretary be instructed to forward a copy of these resolutions and conclusions to the Medical Press, Associated Press and the secretaries of the several state medical societies, with the request that they publish same and take suitable action thereon.

"(1) Enforcement of existing laws regarding the sale of toy pistols and other dangerous toys.

"(2) Enactment of laws by the nation, states and municipalities prohibiting the manufacture and sale of toy pistols, blank cartridges, dynamite canes and caps, cannon crackers, etc.

"(3) Open treatment of all wounds, however insignificant, in which from the nature or environment there is any risk of tetanus.

"(4) Immediate use of tetanus antitoxin in all cases of Fourth of July wounds, or wounds received in barnyards, gardens or other places where tetanus infection is likely to occur.

"(5) As a forlorn hope, the injection of tetanus antitoxin after tetanus symptoms have appeared."

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 17, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,115	367	26.55	12.47	2.96	8.79	1.44
Chicago . . .	1,885,000	459	143	30.07	8.28	4.36	11.11	3.48
Philadelphia	1,378,527	887	103	22.22	8.27	2.32	6.46	2.32
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	168	52	28.57	9.52	2.98	4.17	2.98
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	135	52	30.37	10.37	—	5.92	1.50
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	66	25	22.73	9.09	—	6.06	4.55
Boston . . .	603,163	180	59	23.88	10.56	3.88	6.67	1.11
Worcester . .	132,044	27	12	14.81	11.11	—	11.11	—
Fall River . .	115,549	35	15	25.71	11.43	—	17.14	—
Lowell . . .	101,959	28	13	32.14	10.71	3.57	7.14	7.14
Cambridge .	98,639	25	9	24.00	4.00	4.00	12.00	—
Lynn	72,497	13	2	15.38	—	—	15.38	—
Lawrence . .	69,766	21	9	42.86	4.76	4.76	23.81	—
Springfield .	69,389	14	4	14.44	—	—	—	—
Somerville .	68,110	—	—	—	—	—	—	—
New Bedford	67,198	16	6	25.00	18.75	—	—	6.25
Holyoke . .	49,286	14	7	35.71	15.71	—	15.71	—
Brockton . .	44,873	11	4	9.09	—	—	—	9.09
Haverhill . .	42,104	5	—	20.00	—	—	—	—
Newton . . .	37,794	10	2	20.00	—	—	10.00	—
Salem	36,876	11	3	54.55	—	27.27	—	9.09
Malden . . .	36,286	10	2	10.00	—	—	—	—
Chelsea . . .	35,876	13	5	—	—	—	—	—
Fitchburg . .	35,069	7	3	14.29	—	—	—	—
Taunton . . .	33,656	7	2	14.29	—	—	—	—
Everett . . .	28,620	4	4	—	—	—	—	—
North Adams	27,893	8	2	25.00	—	12.50	—	12.50
Gloucester .	26,121	5	1	40.00	—	—	—	—
Quincy . . .	26,043	—	—	—	—	—	—	—
Waltham . .	25,198	7	3	14.29	42.86	—	—	—
Brookline . .	22,608	2	—	—	—	—	—	—
Pittsfield . .	22,589	5	1	—	—	—	—	—
Chicopee . .	21,031	4	3	50.00	—	—	25.00	—
Medford . .	20,962	2	1	100.0	—	50.00	—	—
Northampton	19,883	7	—	14.29	—	—	—	—
Beverly . . .	15,302	3	—	—	33.34	—	—	—
Clinton . . .	15,161	3	1	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	7	4	28.57	14.29	28.57	—	—
Woburn . . .	14,300	1	—	—	—	—	—	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	3	2	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	4	1	25.00	—	—	25.00	—
Melrose . .	13,600	2	—	—	—	—	—	—
Westfield . .	13,418	—	—	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	—	—	—	—	—	—	—
Framingham	12,534	5	—	—	20.00	—	—	—
Peabody . . .	12,179	—	—	—	—	—	—	—
Gardner . .	11,928	4	—	25.00	—	—	—	—
Weymouth .	11,344	6	—	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	2	1	—	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 2,861; under five years of age, 923; principal infectious diseases (smallpox, measles, scarlet fever, cerebro-spinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 744, acute lung diseases 286, consumption 303, scarlet fever 19, whooping cough 14, cerebro-spinal meningitis 7, smallpox 12, erysipelas 8, puerperal fever 9, measles 6, typhoid fever 58, diarrheal diseases 231, diphtheria and croup 94.

From whooping cough, Baltimore 4, Providence 3, Philadelphia 2, New York, Chicago, Pittsburg, Boston, and Chicopee 1 each. From erysipelas, New York 3, Boston 2, Philadelphia, Pittsburg and Newton 1 each. From smallpox, Pittsburg 8, Philadelphia 4. From measles New York and Providence 2 each, Philadelphia and Boston 1 each. From scarlet fever, New York 6, Philadelphia 5, Chicago 3, Boston 2, Baltimore, Pittsburg and New Bedford 1 each.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Oct. 3, the death-rate was 15.3. Deaths reported, 4,424; acute diseases of the respiratory organs (London) 161, whooping cough 38, diphtheria 52, measles 38, smallpox 2, scarlet fever 31.

The death-rate ranged from 6.3 in Handsworth to 25.1 in Newcastle-on-Tyne; London 14.1, West Ham 14 6, Brighton 12.1, Southampton 17.5, Plymouth 15.8, Bristol 13.8, Birmingham 17.7, Leicester 16.8, Nottingham 15.1, Liverpool 17.6, Bolton 15 6, Manchester 19.8, Salford 21.0, Bradford 15.1, Leeds 12.1, Hull 16.9, Cardiff 10.6, Rhondda 13.5, Merthyr Tydfil 22.6, Swansea 20.2.

METEOROLOGICAL RECORD.

For the week ending Oct. 17, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. . 11	29.97	52	53	50	93	94	94	N E	N E	17	18	R.	R.	.37
M . 12	29.80	51	53	49	100	94	97	N	N	22	22	R.	R.	.99
T . 13	29.94	54	57	51	82	71	76	N	N E	13	4	O.	O.	.10
W . 14	29.90	57	68	46	74	55	64	W	N	8	8	C.	C.	0
T . . 15	30.08	50	56	44	66	66	66	N	S	7	9	C.	C.	0
F . . 16	30.07	59	70	48	84	82	83	S	S	8	9	O.	O.	0
S . . 17	29.80	64	69	58	89	97	93	S	E	8	18	O.	R.	.92
☞	29.94		61	49			82							2.38

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING OCT. 24, 1903.

B. L. WRIGHT, passed assistant surgeon. Commissioned a passed assistant surgeon from March 3, 1903.

F. M. BOGAN, J. H. PAYNE, JR., and J. J. SNYDER, assistant surgeons. Commissioned passed assistant surgeons from June 7, 1903.

DRS. J. MILLER, JR., E. C. TAYLOR, F. E. CAMPBELL, J. E. GILL and I. S. K. REEVES, appointed assistant surgeons from Oct. 12, 1903.

W. S. PUGH, assistant surgeon. Ordered to the Naval Museum of Hygiene and Medical School, Washington.

J. COWAN, pharmacist. Retired from active service, Oct. 19, 1903, under the provision of Sec. 1453, R. S.

RECENT DEATHS.

DR. MAURICE F. PILGRIM, Professor of Psychiatry in the New York Post-Graduate Medical School and a co-editor of the *Journal of Advanced Therapeutics*, died on October 18, of pneumonia, at the age of forty-six.

ROBERT ABERDEIN, M.D., of Syracuse, N. Y., who was for many years one of the most prominent physicians in Central New York, died after a long illness at the Hospital of the Good Shepherd in Syracuse on October 18. He was one of the original Fellows of the New York State Medical Association.

DAVIDSON H. SMITH, M.D. — Much sympathy is felt for Dr. Andrew H. Smith, President of the New York Academy of Medicine, whose only son, Dr. Davidson Heermance Smith, died suddenly at the Post-Graduate Hospital, New York, during a mastoid operation, on October 23. Dr. Davidson Smith, who was in his twenty-ninth year, was graduated from the medical department of Columbia University in 1902, and since then has been engaged in post-graduate work at the New York Post-Graduate Medical School and Hospital. During the past spring he accompanied his father abroad, and he was one of the delegates of the Medical Association of the Greater City of New York to the International Medical Congress at Madrid.

BOOKS AND PAMPHLETS RECEIVED.

Physician's Pocket Account Book. By J. J. Taylor, M.D. Philadelphia: The Medical Council.

Lessons on the Eye for the Use of Undergraduate Students. By Frank L. Henderson, M.D. Third Edition. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

An Atlas of Human Anatomy for Students and Physicians. By Carl Toldt, M.D., assisted by Alois Dalla Rosa, M.D. Translated from the Third German Edition and adapted to English and American and International Terminology, by M. Eden Paul, M.D. (Brux.), M.R.C.S., L.R.C.P. First Section. Illustrated. New York: Rebman Company. 1903.

Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1900.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1901.

Original Articles.

ON GASTRIC TETANY.

BY B. G. A. MOYNIHAN, M.S. (LOND.), F.R.C.S., LEEDS, ENGLAND.

THE occurrence of tetanoid spasms in association with certain diseases of the stomach, though mentioned by Morgagni, was first prominently recorded by Kussmaul in 1869. His observations referred to cases of dilatation of the stomach in which convulsive attacks had been noticed.

It is now generally recognized that tetany is an occasional complication of several diseases implicating the gastro-intestinal tract. There are, however, widely divergent views as to the frequency and as to the seriousness of the disease, and an attempt has been made to limit the term "gastric tetany" to cases in which there are increased mechanical excitability of the muscles, increased mechanical and electrical irritability of the motor and sensory nerves; a profoundly serious constitutional disturbance and often a fatal termination. Indeed it has almost been made a criterion of the disease that it should end fatally. Frankl-Hochwart, for example, in discussing the records of 40 cases, disallows all but 11, and of these 10 terminated fatally. To restrict the term "gastric tetany" to cases of this type seems to me to preclude deliberately a large number of cases presenting similar, though less serious, manifestations, cases precisely similar in kind, though slighter in degree. The distinction between gastric tetany and tetanoid spasms associated with, and dependent upon, gastric dilatation is one which is arbitrary and irrational. It must, I think, be conceded in the future that the term "gastric tetany" shall include all cases of tetany and tetanoid spasms associated with and directly due to diseases of the stomach.

The occurrence of tetany in gastric disease is more common than is generally known. In the slighter degrees the symptoms are often inconspicuous and are in no way associated in the mind of the patient with the more urgent stomach trouble; it is then not until some leading question is put that he will refer to the "cramps" or "tingling" in the extremities.

In the early stages the patient generally complains of a peculiar numbness or prickling or tingling or a feeling of "pins and needles" in the extremities; in the hands more often than in the feet. There may be also a feeling of coldness or heaviness in the limbs; and drowsiness, or a feeling "as if the head were swelling" has been remarked. More than one patient has spoken of a feeling of fatigue, of infinite weariness in the muscles about to be affected.

The formication frequently follows closely upon the act of vomiting, or upon the washing out of a laden stomach. In not a few cases indeed, the first onset of tetany has been observed after the stomach has been emptied of its contents by the stomach tube. In the severer forms, and in almost all the fatal cases, a history is given of severe and uncontrollable vomiting immediately preceding the attack. As the formication increases, a tetanic contraction of the muscles occurs. In the hand the fingers and the thumb are stiff and slightly flexed, the thumb is strongly adducted and the position of the "accoucheur's hand" is reproduced; the hollow of the hand is deepened, and the thenar and hypothenar eminences exaggerated. The wrists are, as a rule, strongly flexed, but may be extended, the forearm is usually flexed upon the arm; but all the muscles of the forearm and upper arm feel tense and rigid in contraction. During a tetanic seizure some alteration of the position of the limb may gradually occur, the wrist may, from a condition of rigid extension, pass into one of flexion, or from one of pronation into supination, or again, slow, writhing movements may be performed. Occasionally, when the patient feels a tonic spasm beginning in the hand, forcible voluntary movements of the fingers will cause the attack to pass away. As a rule the spasms are symmetrical, but, as Albu pointed out, the one side is almost constantly more profoundly affected than the other. The muscles of the feet and legs may be also, though more rarely, affected; the toes are drawn up into the sole, the ankles and the knees are flexed. The muscles of the face and jaws, of the neck and of the abdomen are all involved at times. The facial exppression is greatly altered, a frowning, anxious or "snarling" appearance being remarked. The muscles of the eyeball are not seldom affected and the sight may be lost for a time; the patient calls out that he "cannot see," or that he is blind. In one of Trousseau's cases the sight did not return for three days. During the paroxysm the patient may mutter or shout unintelligibly, almost as if in delirium; words and phrases are run together unmeaningly. In all the well-marked attacks, the signs of Trousseau, Chvostek, Erb and Hofmann are present.

Trousseau's symptom is described as follows: "So long as the attack is not over, the paroxysms may be produced at will. This is effected by simply compressing the affected parts, either in the direction of their principal nerve trunks, or over their blood vessels, so as to impede the venous or arterial circulation."

Chvostek's symptom is shown by the very great increase in the mechanical excitability of the motor nerves of the part affected; a facial spasm, for example, being produced by tapping over the facial nerve near its exit from the stylomastoid foramen.

Erb's symptom is shown by the great increase in the electric irritability of the nerves and muscles, especially to anodal stimulation.

Hofmann's symptom has reference to the heightened excitability of the sensory nerves, the slightest pressure on which may cause paresthesia in the region of distribution.

In some cases of gastric tetany, but more especially in one case in an old man who had gastric dilatation, the result of duodenal ulcer, I

have noticed during the tetanic seizure a dusky lividity of the parts involved. The face and neck look leaden and suffused, and the forearms and arms, swollen and turgid, have the same appearance as would be produced by the light application of a tourniquet.

As the spasm passes off a return of the tingling in the hands and feet is often noticed, and the patient will rub the hands together, or rub the parts against the bedclothes to obtain relief.

I have almost always found that the agony of the spasm may be relieved by forcibly bending the fingers, flexing or extending the wrist or forearms, or by reproducing passively those movements which would be caused by the active contraction of the muscles involved. Though the first passive movement will often cause an excruciating pain, yet a gentle persistence in the act will cause the spasm gradually to resolve, and will afford the patient great relief.

Intermissions during an attack are often observed. A seizure in which the wrists are flexed may slowly subside, to be presently followed by one in which the wrists are extended. And so the posture of the limbs may vary from time to time. The muscles of the abdomen are affected in the severer cases, the abdominal wall feeling hard, tense and absolutely unyielding.

The general effect produced upon the patient by an attack varies greatly according to the severity and the duration of a seizure. In many cases the tingling or numbness, though frequently noticed, is nothing more than an unpleasant sensation, whose significance is never appreciated. Cramps in the extremities, noticed from time to time soon after the patient gets to bed, are not attributed to their real cause until the surgeon makes pointed inquiry as to their existence. When, however, there is a wide involvement of muscles, and especially when the attack is unduly prolonged, the physical suffering is intense, and the most profound prostration may be witnessed. The pulse at the wrist may be quite imperceptible though the tensely contracted vessel can be rolled beneath the finger. Consciousness may be lost for a time, or the patient's mental balance gravely disturbed by the intensity of his suffering. A severe and prolonged seizure of gastric tetany is, then, almost as serious an ordeal as any patient may experience and live. It is these severer cases which furnish the large mortality recorded by Frankl-Hochwart, Müller and others.

Theories as to the causation. — Three chief theories have been put forward to explain the occurrence of gastric tetany:

(1) Kussmaul, to whom we owe the first description of the disease, attributed the tetany to the general desiccation of the tissues of the body. He considered that the loss of fluid to the body was occasioned in part by the copious and frequent vomiting, and in part by the absence of adequate absorption of fluid from the alimentary canal. Though Kussmaul himself subsequently disclaimed this theory, there have been several who have accepted it, or have thought that the deprivation of fluid might be one among several causative factors. Thus Fleiner[1] states that there is some evidence of inspissation of the blood, and that a fall of blood pressure is probable, and Jürgensen[2] gives support to the theory. Albu thinks, also, that the loss of fluid, if not the final or sole cause, is probably an important predisposing condition. In one case, related by Blazicek,[3] investigation failed to show any loss of fluid to the blood. With few exceptions this theory has now been abandoned by all observers.

(2) Germain-Seé, Berlizheimer and others have suggested that the tetanic spasms are due to a reflex action aroused by the stimulation of the sensory nerves of the stomach. The frequency with which the seizure is immediately preceded by an act of vomiting, or by the passage of a stomach tube, and the fact that a spasm can be elicited by flicking or percussing the stomach, have each lent some support to this reflex theory. It is indeed not to be denied that, whatever may be the ultimate cause making possible the tetanic condition, the stimulus necessary to start the seizure may be derived reflexly from the gastric mucosa. Albu quotes the partly analogous cases of tetanus, and of strychnine poisoning in the frog, in both of which toxic conditions a convulsion is instantly caused by the slightest peripheral irritation. Though this theory has been practically discarded by recent writers, it is, in my judgment, one that we cannot afford wholly to ignore.

(3) The third theory is the theory of autointoxication. It is one that has received the weightiest measure of support from recent authorities, and is that which is most in accordance with the facts. The poison or poisons are generated in the stagnant and putrefying contents of a dilated stomach. Bouveret and Devic separated from the stomach contents of a patient with hyperchlorhydria and gastric retention a poison soluble in alcohol, which produced convulsions in animals. In their opinion hyperacidity is a condition to which considerable importance should be attached. The frequency of its occurrence is attested by the fact that in many of the records it is especially observed that the vomited matters were intensely acid or sour. If this theory of auto-intoxication were correct, it would naturally be expected that the injection of the untreated stomach-contents into animals would produce some convulsive seizures resembling those occurring in man. All such experiments have, however, entirely failed. Carnegie Dickson, who has very fully and very ably recorded a most interesting case of gastric tetany, quotes Müller, von Jaksch, Berlizheimer, Blazicek, Landsteiner, Gumprecht and Albu as all having failed to obtain results. In Carnegie Dickson's case no results were obtained from a series of inoculations into rabbits and guinea pigs. Subcutaneous injections were made of the following solutions:

[1] Münch. med. Woch., March 10, 1903, No. 10.
[2] Deut. Archiv. f. klin. Med., 1898.
[3] Wien. med. Woch., 1894.

(1) Filtrate of unaltered stomach-contents.

(2) Filtrate of stomach-contents evaporated to dryness in vacuo or a strong sulphuric acid at a temperature of 40° C. and extracted with normal saline solution.

(3) Filtrate of stomach contents evaporated as in No. 2, extracted with alcohol; again evaporated to dryness and then extracted with normal saline solution.

No result whatever, either of a paralytic or of a convulsive nature, followed these inoculations, though none were made by the intravenous method recommended by Bouveret and Devic. The auto-intoxication theory, therefore, though plausible and attractive, lacks any proof from the experimental side.

It is possible that in the second and third theories jointly, the true solution may be found. A poison formed in the stagnant contents of the dilated stomach may be absorbed, and both invoke the tetanoid convulsion and make more responsive to peripheral irritation the nerve centers in the brain and spinal cord. It is worthy of emphasis that in many instances an excess of free hydrochloric acid has been present in the stomach contents. To this, as already mentioned, Bouveret and Devic attach considerable importance as a factor in the etiology. Gumprecht and many others have found this condition of persisting hyperchlorhydria, but Blazicek, in one case, was unable to discover any trace of the free acid.

The relationship which may exist between gastric tetany and the condition of the kidneys is in need of further investigation. In many of the recorded cases albuminuria has been present; in some of these no naked-eye existence of kidney disease has been obtained at the autopsy, in others advanced chronic nephritis has been found. If the tetany be due to auto-intoxication, it is possible that the elimination of the toxin may have a damaging effect upon the kidney and be the cause of an inflammatory change. Hemmeter has recorded three cases of nephritis which he thought owed their origin to auto-intoxication. The single case of albuminuria in gastric tetany that I have had under my own care was in the person of an old alcoholic.

Pathology. — In almost all the recorded cases of gastric tetany, dilatation of the stomach has been a pronounced feature. Indeed, only one authority, Albu, has admitted the existence of tetany without dilatation. The dilatation is due to stenosis at or near the pylorus, and is associated with thickening and muscular hypertrophy of the stomach walls. Carnegie Dickson observed in his case that in the height of the seizure, the size of the stomach was greatly increased. As a rule the peristaltic waves can be seen passing across the stomach, and Mayo Robson has observed in one of his cases that "the exacerbations of the tetanic state were always associated with a painful contraction of the stomach, and that when the wave of contraction had reached the pylorus, the latter, which was previously incapable of being felt, formed a distinct hard tumor. The abdominal pain then became very intense, and the tetanic cramps in other muscles came on, or, if already present, became intensified." The ulcer at the pylorus may extend into the duodenum, or be associated with separate duodenal ulcers (as recorded by Loeb, Neumann and others), or duodenal ulcer may alone be found (as recorded by Bamberger, Renvers, Dujardin-Beaumetz and others). In Blazicek's case the gastric dilatation was due to the pressure of an enlarged stone — containing gall bladder upon the duodenum. Berlizheimer assigned the dilatation in his patient to the pressure of a pancreatic cyst on the duedonum. In one case related by Muller tetany occurred in connection with an hour-glass stomach. In fewer instances the pyloric obstruction may be caused by malignant disease, as recorded by Trevelyan and others, and in fatal cases a condition of "ulcus carcinomatosum" has been found by Bouveret and Devic and Riegel. In Trevelyan's first case malignant disease of the duodenum was found. In three cases out of a total of five under my own care submitted to operation, duodenal ulcer, associated in all with gastric ulcer, was found. In one of these there was well-marked chronic pancreatitis. An examination of the recorded cases has certainly seemed to show a large proportion of instances of duodenal ulceration.

The conditions most frequently found associated with gastric tetany are pyloric stenosis, dilatation and hypertrophy of the stomach, and enduring hyperchlorhydria. The stenosis is due to the partial or complete healing of a chronic ulcer of the stomach or duodenum. Of the existence of this ulcer there is ample evidence in the history of prolonged indigestion, vomiting and other characteristic symptoms.

Treatment and prognosis. — The medical treatment of gastric tetany consists in frequent and thorough lavage, rigid dieting and the administration during the height of an attack of sedatives, bromides of potassium or ammonium, or in the severer crises of morphine hypodermically.

It has been said, and with some show of reason, that the washing out of the stomach excites the occurrence of tetany. The lavage is distinctly teasing and irritating, and if the cleansing of the stomach be inadequately done an ample quantity of putrid fluid may be left to provide a toxin for absorption — absorption which is rendered easier by the washing away of mucus from the lining of the stomach. But the lavage — and the point needs emphasis — should be very thoroughly done, and the surgeon must not desist until the fluid returns absolutely clean. In one patient of my own no less than forty quarts of fluid were used before the return water was clear, and the washing-out took sixty-five minutes. The process of gastric lavage is too often performed in a hasty and very perfunctory fashion. But carefully and patiently done it cannot be in itself the cause of gastric tetany. As Clifford Allbutt says, "Careful washing should rather cleanse and prevent evil, than be itself the cause

of tetany and convulsions." Carnegie Dickson states that in the case related by him the feeling of gastric discomfort and the tendency to vomiting were considerably allayed by the following method, which Professor Greenfield has for several years adopted with very marked benefit in many cases of gastric dilatation: After washing out the stomach with a solution of phosphate of soda, and previously, if necessary, with weak Condy's fluid or boric acid solution, a certain quantity, say ten ounces, of boiled milk containing sodium phosphate in the proportion of a drachm to the half-pint is left in the stomach diluted with hot water. Intravenous infusion of saline fluid may be adopted or copious hot water enemata may be given. The final and the appropriate treatment in all cases of gastric tetany should, however, be surgical. From what has been said as to the pathology of the condition it is clear that in almost all cases there is a grave mechanical obstacle to the onward passage of the food. It is this obstacle which causes the dilatation and the hypertrophy of the stomach. To relieve this obstruction and to do away with the stagnation of the stomach contents, surgical measures are necessary. In simple cases gastro-enterostomy will be the method of choice. In malignant cases a partial gastrectomy or gastro-enterostomy as circumstances dictate. In hour-glass stomach, gastro-gastrostomy combined with gastro-enterostomy performed in the distal pouch will, as a rule, be the suitable operation. Death occurring as the result of gastric tetany may occur in the first seizure or after a long series of attacks. Marten's case terminated fatally in the first attack, four hours after its onset. Trevelyan's patient, who had carcinoma of the duodenum, was first attacked with tetany on the morning of July 8, 1898, and died at 2 P.M. the same day. In other cases, as in Kussmaul's and in Carnegie Dickson's, there may be intervals of perfect health between severe attacks.

The records given by many writers show that gastric tetany is an extremely serious and often fatal disease. Thus in 11 cases accepted by Frankl-Hochwart as genuine, 10 died; Bouveret and Devic record 18 deaths in 23 cases; Albu, 31 deaths in 40 cases; Riegel, 16 deaths in 27. But almost without exception, such cases are of old standing. The chronic gastric ulcer, the stenosis which it causes, the dilated and hypertrophied stomach, have all been sources of troubles for months or for many years. It is only in the late stages of such cases that severe gastric tetany is seen. And such late stages are preventable. By treating all such cases surgically, and there is no other rational treatment, gastric tetany of the lethal type will soon be a forgotten disease. Even the slighter manifestations which I have mentioned, prickling, tingling or numbness of the hands, occasional and transient cramps in the muscles of the extremities, — even these are only seen in cases of long standing. The earlier adoption of surgical measures in these disabling conditions of the stomach, conditions in which there is grave mechanical impediment to the free working of the organ, will banish altogether that class of patient which furnishes us with the last desperate forms of gastric tetany.

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A STUDY OF PATHOLOGICAL FERMENTATION IN THE STOMACH.[1]

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PATHOLOGICAL fermentation in the body produced through the agency of bacteria and other lower organisms introduced from without is today established as one of the most fundamental and fruitful sources of the various diseased conditions to which the flesh is heir.

The process has various manifestations and occurs in various localities in the body. It is a chief causal factor of the conditions and symptoms found in the so-called infectious diseases. It occurs in abscess formation and so-called septic infection generally. It is a prominent feature in the disturbances of the alimentary tract.

Whenever and however it occurs, its manifestation and action may be both local, causing disturbance of the part where the process is located, and general, causing systemic disturbance from the absorption of the pathological products due to its existence. We thus have to look to it as an element or associate in a great variety of diseased conditions and the study of the process, both generally and specially, is most essential and practical for the understanding of medicine.

I have been for some time investigating these processes of pathological fermentation in one principal locality of their occurrences in the body, the alimentary tract. And I wish to report to you to-night the results of a study of this subject in a very interesting case of gastro-enteric disease which I saw at this hospital. The case was one of gastrectasis due to obstruction from an ulcer of the pylorus and upper duodenum, and one of its chief manifestations in its symptoms and clinical findings was an excessive pathological fermentation in the stomach.

The history of the case was as follows:

James Dwyer, aged forty-six. Foundryman.

Up to a year ago the patient was perfectly well. At this time his wife was ill with a fatal

[1] Presented at the Massachusetts Hospital Clinical Meeting April 10, 1903.

illness and he was up all night with her, besides working all day, for three months. Towards the end of this vigil he began to note distress in his stomach and eructations of gas, the trouble occurring most frequently at ten or eleven o'clock at night, five hours or so after his evening meal. As time went on this trouble increased. Finally he came to have regular spells of severe pain in the epigastrium associated with eructation, regurgitation, waterbrash and finally vomiting, occurring each night. Vomited once or twice in the night, often a quart or more at a time. Vomitus was very acid. There was never blood. The vomiting gave relief of pain until the next night. During the day had some eructation and occasional regurgitation of very acid stuff, but no special distress. There was loss of twelve pounds' weight in six months.

The patient came to me in the morning, having eaten nothing since 6 P.M. on the previous day. He had vomited once in the night.

At this time 1800 cc. of contents were expressed from the stomach. With inflation the lower border of the stomach was four inches below the umbilicus, upper limit normal. There was a suggestion of thickening of the stomach or intestinal wall in the region of the pylorus. The stomach held 2500 cc. of water without difficulty. The blood and urine were practically normal and there were no other evidences of disease about the case.

The record of the physical and chemical examination of the contents was as follows:

Quantity 1800 cc.

Upon standing, contents separated into three layers and bubbles of gas could be seen rising from lower portion.

Odor, sour — the odor of acetic acid and butyric acid in gastric contents.

Reaction acid (litmus).

Free acid present (congo red).

Free HCl absent (Gunzburg reagent).

Combined HCl present (Ewald Sjoqvist test).

Lactic acid present (Fe_2Cl_6 test in ether extract of residue from distillation).

Butyric acid present (ethyl ester in distillate).

Acetic acid present (Ethyl ester in distillate test).

Total acidity = 0.43%.

Total free organic acids = 0.14%.

Total combined acids = 0.28%.

Pepsin present.

Rennin present.

The contents gave the reaction for alcohol (iodoform test; bichromate test).

The gas evolved by the contents was found to be principally carbon dioxide. The quantity of gas evolution was measured by placing contents in one of these gas tubes at 37° C. It was found that 100 cc. of contents formed 30-40 cc. of gas in twenty-four hours.

Specimens of contents removed on several occasions after the patient had, first; complete lavage of the stomach, then regular feeding for a day upon selected food which contained traces only of organic acids or their salts, then a twelve-hour fast showed a similar character to that of which the analysis is given.

The patient was placed upon a suitable method of diet with lavage every second day. From the institution of the treatment vomiting and distress ceased. After a short period the patient was able to keep at his work and feel perfectly well by keeping upon this system of diet and using the stomach tube once a week at the most. Finally the use of the tube was entirely done away with. In six months the patient had gained twenty-five pounds and was as well as ever.

Eight months from the time of the first visit the patient was taken suddenly in the afternoon with dizziness followed by extreme weakness. An hour later there was a copious movement of the bowels, which was black and tarry in appearance (patient's statement). For three days following there were one or two similar movements. Patient was extremely restless and very weak. On the fourth day vomited some blood. The next day he came to my office with the above history.

At this time was very pale and walked unsteadily.

Pulse 110, temperature 99° F.

Blood showed hemoglobin 25%.

Red count, 1,400,000 per cmm.

White count, 15,000 per cmm.

Stained specimens showed marked anemia, with a few blasts present. A diagnosis of ulcer of the duodenum was made and the patient sent to the hospital. At ten o'clock that night he had a large hemorrhage indicated by copious discharge from the bowels of a tarry nature, containing blood, and by a drop in the hemoglobin to 10% and in the number of red corpuscles to 800,000. On the next day the patient, then unconscious, was operated upon by Dr. Harrington. A large bleeding ulcer of the duodenum with evidence of present or previous ulcer growth extending from the pylorus an inch and a half along the duodenal wall was found. Patient died six hours later. The autopsy confirmed the previous findings.[2]

The element of this case which has been the subject of this special investigation is the pathological fermentation which was associated with it.

The evidences of this fermentation, found both in the symptoms and in the results of the physical and chemical examination, were first, the excessive formation of gas demonstrated by the experimental observations described and evidenced by the symptoms of swelling of the stomach and excessive eructation.

Second, the presence in the gastric contents of certain chemical substances not found in the normal stomach, or quantities of these substances greatly in excess of those which are found in normal conditions. The most prominent and important of these substances were alcohol and these organic acids — lactic acid, butyric acid and acetic acid. The presence of these compounds

[2] See Mass. Gen. Hospital autopsy reports, 1902.

was evidenced by the results of the chemical analysis.

Third, the presence in the sediment of excessive numbers of bacteria, including sarcinæ, and of the yeast fungus.

The contents removed from the normal stomach give practically no gas formation in experimental tests such as those used to test this matter in the case in hand.

They show no test for alcohol upon removal from the stomach and give no test for lactic, butyric or acetic acid unless the food contain these substances or the salts of the acids, in which case the quantity present is never in excess of the food content.

The sediment contains very few bacteria or yeast fungi and almost never sarcinæ. Here is a tube of normal contents arranged to show gas formation, which has been kept at 37° C. for forty-eight hours. As you see, there is practically no evidence of gas formation as compared with the tube from the contents of our case, where a half tube full of gas has formed in twenty-four hours.

Having established the fact of fermentation and the definite products in this case, I proceeded to make a further investigation to determine, if possible, by experimental methods the genesis and controlling conditions of this pathological fermentation.

The first step in the investigation consisted of a biological study of the fresh contents to determine what active forms of organized ferments which might serve as causes of fermentation were present.

Gelatin plate cultures were taken from several specimens of the fresh contents removed at various times from the stomach after a twelve hours' fast.

In the first attempt numerous colonies of various appearances were obtained. A careful examination of all these colonies showed that they represented four (4) distinct types of bacteria, and four only.

These four types were:

(1) A coccus growing in small white colonies on the gelatin.

(2) A short bacillus growing in small white colonies and showing in instances in the growth in gelatin evidence of gas formation.

(3) A long bacillus growing in large creamy white colonies and liquefying the gelatin.

(4) An organism growing in white colonies and answering to the morphological characteristics of the sarcinæ ventriculi. The sarcinæ were obtained only once. This was in the culture made from the first specimen of contents obtained.

Several plate cultures taken from this same contents showed in all instances one or more of these four respective organisms and in no instance any other form of organism.

Here is a plate culture preserved by formalin representing a first dilution of an original gelatin culture from the contents, containing three of the above forms of bacteria,— the coccus, the short bacillus and the long bacillus. You can see the evidences of gas formation about some colonies, those of the short bacillus.

I have here also agar culture of each of the four types of bacteria found, isolated on the agar in pure culture: (1) the coccus; (2) the short bacillus; (3) the long bacillus; (4) the sarcinæ. Here is also a pure culture of the short bacillus in gelatin, showing the abundant gas formation about the colonies.

From these culture experiments, then, we have obtained evidence of the existence of at least four forms of organized ferment in our contents.

That the number of forms of organism obtained on gelatin growths was limited to four in all cases was a surprise, for it has been proven that the mouth in normal conditions contains a large number of organisms which are swallowed with the food, many if not all of which grow on gelatin. Also the food itself contains many bacteria, and many forms of bacteria introduced from these sources and in this manner have been isolated from the normal stomach.[3]

Miller has isolated seventeen forms of bacteria from the mouth. Abelous[4] has isolated sixteen forms of bacteria from the stomach in a set of observations. A few of these were found present in the stomach of a man killed at the height of digestion. None were pathogenic. All sixteen forms produced some fermentation of food in vitro. Most of them caused no appreciable effect of this kind in normal gastric contents. At first their action was very slow, taking several days to be appreciable and not to be compared with the energetic action of our pathological ferments in this case.

It is to be presumed that the failure of many of such forms as are found in the normal stomach contents to grow in this case and the reduction of the active bacterial products to four forms, was due to the inhibiting effect of the products of the fermentation upon bacterial growth. Also there were doubtless organisms present here which did not grow on gelatin. Thus the yeast fungus seen in such growth in the sediment does not grow on this medium. From its appearance in the sediment, however, it gave every evidence of being or having recently been in active growth in the contents.[5]

The capacity of yeast to cause fermentation of sugar is long established since the original observations of Cagniard-Latour.[6] The capacity of yeast to perform this fermentation in the human stomach is proven. Kuhn isolated and grew yeast from the stomach and produced by its action alcohol and gas in carbohydrate solutions in vitro.

Having determined the presence of these possible causes of our fermentation, the next step in the investigation was to associate them definitely in the chain of cause and effect with this fermentation by experimental demonstrations. To accomplish this fact, mixtures of food substances

[3] Straus: Ztschr. f. klin. Med., xxvii, 1895.
[4] Abelous: Soc. de Biologie, Feb. 9, 1889.
[5] Ztschr. f. klin. Med., Nos. 49 and 50, 1892.
[6] L'Institute, 1835, iii, 150.

similar in character to those present in the contents of the case were made up, sterilized and inoculated with the various forms of organism isolated. This experimental work was done with the three forms of bacteria which were present on repeated culture experiments.[7]

The food mixtures used were solutions of glucose and peptone. The test solutions, having been sterilized and found by tests to be free from alcohol and organic acid, were inoculated and placed in gas test tube at 37° C. and tested at various periods up to forty-eight hours to detect the evidences of fermentation, gas formation, or alcohol or organic acids.

As a result of these experiments it was found that each of the three forms of organism isolated possessed the capacity to produce in the food mixture some decomposition products similar in nature to those abnormal products found in the fermenting contents from which the bacteria were isolated.

The action of the several forms of organisms showed considerable variety.

All three formed gas (CO_2) and alcohol at some stage of the fermentation and all formed some kind of organic acid.

The specific action of each organism may be seen from the accompanying table. As you can see from this, when the products of each organism are combined we have the whole collection of abnormal organic products which are found in our contents.

TABLE.

1. Coccus in 100 c.c. neutral carbohydrate-proteid solution for 24 hours produced — gas 50 cc.
   Alcohol.
   Lactic acid (a trace).
   Acetic acid.
   Total acidity = 44 cc. decinormal soda in 100 c.c.
   Total free (organic) acid = 14 c.c. decinormal soda in 100 c.c.
2. Short bacillus in 100 c.c. solution for 24 hours produced — gas 40 cc.
   Alcohol.
   Butyric acid.
   Acetic acid.
   No lactic acid.
   Total acidity =30 cc. decinormal soda in 100 cc.
   Total free acid = 10 cc. decinormal soda in 100 cc.
3. Long bacillus in 100 cc. solution for 24 hours, produced — gas 20 cc.
   Alcohol.
   Lactic acid (much).
   Acetic acid.
   Total acidity = 40 cc. decinormal soda in 100 cc.
   Total free acid = 16 cc. decinormal soda in 100 cc.

Control solutions of the food mixtures showed none of these abnormal products and no gas formation under the same conditions.

We have thus in our case determined a genesis of the pathological fermentation present by the experimental method. That is, we have, to use the traditional phraseology, isolated certain definite organisms repeatedly from a contents, grown these in pure culture, and produced by their inoculation to sterilized food mixtures an infection similar in character and producing similar fermentation products to that found in our original case.

Also we have determined the special ferment action of each of the three organisms present.

Of course, it does not follow from this work that the organisms isolated are the whole cause of the fermentation in our case. Also, in this work the complete fermentation process has not been investigated. We simply determined the fermentation by the presence of certain abnormal decomposition products and reproduced the fermentation which will form these products.

This work is sufficient, however, to serve as an experimental demonstration of pathological fermentation in the body and to give us a fundamental understanding of the process, as it was produced in our case, serviceable for clinical instruction, and it was to obtain a simple scheme of demonstration of this subject for use in medical instruction that this work was undertaken.

Further investigation of the subject — consisting of the identification and study of the properties of the bacterial ferments isolated in this case; their action in varying strengths of free hydrochloric acid; their growth and products in various food substances, as pure carbohydrate or proteid solution; and the influence of various so-called disinfecting drugs upon their activity — will be reported in a late article.

I wish to express my thanks to Prof. Harold C. Ernst for assistance in this work, a part of which was done in his laboratory.

[7] Sarcinæ were obtained but once in culture. They were present in numbers in the sediment in the first specimen of contents only. The ferment action of this form of bacteria has been studied by Coyon (Contribution to the Study of the Sarcinæ Ventriculæ, Compt. rend. de la Soc. de Biol., Dec., 16, 1899). He found that sarcinæ in pure solutions of peptone formed acetic and formic acids and some butyric acid. In carbohydrate solution they formed acetic, formic and lactic acids.

INTERNAL MEDICINE, TO WHAT EXTENT REQUIRED OR ELECTIVE IN THE MEDICAL COURSE?[1]

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In order to more clearly define the applicability of the elective system to internal medicine it is almost necessary to consider first its general relation to a medical course and to review briefly the trend of medical educative thought.

The sociologic and economic conditions of the country do not at present, as formerly, require a large number of physicians to supply from time to time the needs of the smaller communities. There is on the contrary an appeal for relief from the incubus of the insufficiently prepared practitioner, in order that more encouraging inducements may be offered to the type of the educated physician.

From a strictly business standpoint these inducements to spend years of preparatory study are now becoming not particularly attractive to those contemplating general medicine in view of the active competition incident to the overcrowding of the profession. Failure to remain

[1] Read before the American Academy of Medicine in Washington, May 12, 1903.

in medical practice is said to attend the efforts of nearly one-third of all graduates in recent years.

Despite the recent advances in medical teaching, consisting in part of more rigid requirements for admission, the lengthening of the period of study and the enlargement of the curriculum, all tending to impose legitimate restrictions upon the number of students, and notwithstanding, also, the well-known uncertainties of success in practice, there is, nevertheless, no material diminution in the number of young men willing and anxious to undertake the laborious task of systematic medical study.

This implies a certain change in the motives and aspirations of the more liberally educated medical students of to-day, some of whom are induced to begin the study of the purely scientific aspect of medicine, with its opportunities for original research and investigation, while others are attracted early to the possible attainment of special knowledge and skill in certain departments, with the hope of subsequent contribution to the science of medicine, rather than the acquirement of a large general practice.

These natural tendencies in students have been further influenced by necessary and progressive changes in the course of medical instruction.

As a result of the greatly enlarged curriculum and the enormous increase of medical knowledge, the student is brought to a realization in the beginning of his career that he will be utterly unable to acquire even a superficial knowledge of all branches, and that he may hope to attain a degree of proficiency only in a small proportional part of his profession.

The inevitable result is an appreciation of the necessity for specialization in some form. In spite of the admitted objections to the greater development of specialism, the fact remains that it is distinctly in accord with popular and professional demand. A high degree of special attainment based upon broad fundamental knowledge has ever been the chief factor in advancing the science and art of medicine. Save in the remotely settled districts, the day of the general practitioner in his ordinary acceptance is nearly at an end, and in his place are to be found men, who, if they are less courageous, less self-reliant than the time-honored country doctor, are, nevertheless, more cognizant of their limitations.

To encourage intelligent specialism, to afford an opportunity to excel in certain departments, and at the same time to guard against superficial and disproportionate work, constitutes an important province of the modern medical school.

To this end a full interpretation of the elective system has been offered, not with a view of aiding premature specialization, but more to permit an early beginning of a thorough preliminary preparation leading to subsequent advanced work either in internal medicine or other specialties.

The elective system may be defined as that method of instruction which permits the exercise, under a supposedly wise direction, of the student's choice of study according to his conception of his peculiar needs and purposes and his inherent adaptability for certain work. That a flexible curriculum is correct in principle and has been shown by experience to be a distinct advance in colleges of liberal arts and preparatory schools, no observer of pedagogic conditions will deny. This, however, in view of the greater responsibility involved in medicine, does not necessarily constitute evidence in favor of its general adoption as a system of medical education.

It may be said to possess definite advantages in certain institutions, and be capable therein of its most complete and satisfactory elaboration, according to the size, facilities and purposes of the school. Manifestly precisely similar conditions may not be in force in other colleges, and an equal observance, therefore, of the elective system rendered impractical, or if attempted to the same degree productive only of harm.

It follows that the extent of the applicability of the system to any school must vary according to the peculiar scope and working ideals of the institution. It is recognized that the purposes of some of the modern university medical schools are much more comprehensive than merely to educate doctors. The preparation and training of practical physicians, as exemplified in undergraduate instruction, forms but a single integral part of their real mission or ambition. Their energies are devoted in part to the rendering of post-graduate instruction, the pursuit of original research on the part of the professors and selected students, the investigation of new discoveries and new phases of medical learning and to the possible enlargement of the practical scope of pure science. It is in these institutions that the elective system is of the utmost advantage in offering opportunity for the attainment of the highest degree of technical learning, and is to be commended in its fullest interpretation, if practised under the restraining, governing and advisory counsel of the proper officials of the faculty. Such institutions are scarcely to be subjected, however, to the same principles of thought accorded to the medical school proper, whose sole object is to shape the early education of working doctors. Even in such institutions the elective system may be said to present certain features of advantage if applied with discrimination to the latter portion of the course, presupposing a thorough preparation in the required fundamental studies, and subject in each instance to the well-considered approval of the medical authorities. The degree to which such satisfying result may obtain must vary according to the peculiar conditions in force in each institution, thus rendering any school in this respect a law unto itself. The size of the school, the number of students, the amount of endowment and the proportionment of electives, afford no reliable measure of its real efficiency. A small school is not necessarily of low standard, provided it possesses ample laboratory and hos-

pital facilities, and embraces in its faculty men of sufficient preliminary education, of ripe experience and possessed of proper enthusiasm and high ideals. In like manner it is not simply the method or system of instruction, elective, required, didactic or clinical, that determines in full the career or usefulness of the student, as much as the manner in which the subject is interpreted and the degree of inspiration awakened by the instructor.

The practical utility of the elective system varies not only with reference to the institution where it is employed, but also according to the extent of its application to the various departments. As practiced in a few institutions it permits not only the choice of the subject, but of the instructor as well, and the manner in which instruction shall be given.

What are some of its recognized general advantages in a well-balanced and duly proportioned course of instruction?

I. The adaptability of the particular study to the peculiar requirements and mental receptivity of the student based on the known divergence in character and degree of individual capacity.

II. The consequent increased interest on the part of the student in not being compelled to devote valuable time to some irrelevant, and to him apparently unimportant branch.

III. The greater degree of technical efficiency attained by those anticipating a specialty through the additional time afforded for such preliminary preparation.

IV. The improved opportunities for observation and study afforded to those contemplating general medicine in being relieved of too rigid requirements in a few of the distinctly refined specialties.

V. The shortening of the period of time demanded in preparation for practical work, this not to imply, however, the completion of special education in a four years' course.

VI. The inspiration and incentive derived on the part of the instructor, from the fact that his students are at once earnest and enthusiastic, and that he himself is given immediate active recognition.

VII. The opportunity afforded in the larger institutions for the more intimate contact of instructor and student. This closer association and exchange of thought incident to the smaller colleges is of great utility in the imparting of knowledge.

These general advantages of the elective system, though scarcely worthy of detailed elaboration, may obtain in all instances if under the actual and not nominal supervision of a board of control.

There are objections, however, to be made and answered as to the practical employment of the system. The basis of these objections is found to exist purely through a possible laxity or carelessness on the part of the faculty in the exercise of their advisory, or, if necessary, arbitrary function.

I. The necessity exists on the part of the faculty for infinite patience and time in the deliberate consideration of each student's needs and purposes in order to ensure a proper selection of study. This is sometimes difficult of practical attainment, and demands that the work of review and counsel be apportioned to a duly constituted committee who shall be held responsible for results.

II. There is a possibility of error in the choice of method of instruction, the tendency being perhaps to neglect didactic and recitation teaching for the apparently more natural or practical instruction at the bedside. Here the text is found in the patient rather than the disease. While this constitutes the essential thought in actual practice, it is insisted that its proper judicial fulfilment could not be there attained, save by a course of preliminary instruction relative to the disease itself. The student is enabled to profit by the clinical work as illustrative of what has been previously acquired from the comprehensive and well-rounded lecture or recitation. The bedside teaching develops careful methods of examination and closeness of observation, besides emphasizing in a practical way the lessons of the didactic lecture and textbook. It should be carefully guarded, therefore, that in the student's choice of method each co-ordinate branch of instruction be given within certain fixed limits its due and justly accorded place.

III. The selection of a prospective specialty may be made at too early a period in the course of medical instruction, this involving the possibility of an unwise choice before the student has had sufficient opportunity to properly appreciate his own inclinations and special fitness.

As a matter of fact, however, the student is usually prepared to judge somewhat as to his tastes and desires relative either to scientific or practical work upon the completion of his required fundamental studies. If teaching of scientific subjects or laboratory investigation is selected as the most suitable field for future work, the decision is better made then than at the time of graduation. If a course of special practical study is avowedly instituted in the midst of his period of undergraduate instruction, it is certainly destined to result more satisfactorily if pursued under the direction of the faculty than if practiced as formerly, according to the fancies and prejudices of the student, who has always been found to entertain notions of his own concerning the line of work he is supposedly designed to follow.

IV. The likelihood is suggested that measures looking toward too early specialization may produce superficial and embryonic results. Should the training and instruction in special work preparatory for practice be permitted to end upon graduation, against which possibility there is unfortunately no distinct remedy, the objection is only too well sustained. If, however, postgraduate work is insisted upon as a *sine qua non* before entering upon special practice, it must follow that the selected grouping of studies in

undergraduate instruction has only served to render more thorough and complete the preliminary preparation for specialism.

It is evident that a properly regulated course of electives constitutes one of the most conspicuous advances in modern medical teaching. Its degree of usefulness varies according to the extent of its application and control peculiar to each department of a medical course.

How far shall this apply to internal medicine?

The relation of internal medicine to the elective system is radically different from that of all other co-ordinate branches of medical instruction, in that it occupies a position singularly unique and distinctive in its scope and requirements. Its practical working basis may be said to consist of a modified form of individual and original research supplemented by inductive clinical reasoning. It is not even an applied science in the sense of the suggested assumption of fixed definite evidence or demonstrable truth. Its sphere of action may be regarded rather as a thinking, reasoning empiricism, involving speculative deductions along the projected lines of laboratory and pathological investigation, extended to the border limits of actual experience. In the practice of internal medicine the cases are not presented in classified form, catalogued and indexed, but rather furnish in themselves the source and inspiration for needful study and detailed investigation, in order to harmonize apparent differences and properly elucidate the relations of perplexing complications.

Rational medical interpretations are directly resultant upon the closeness of the observations, the accuracy of the premises and the soundness of the logical reasoning, rather than upon the application of the known laws of pure science, or resource to a mental accumulation of authoritative data.

The field of knowledge of internal medicine may be said to comprise an enormous mass of discrete, disordered and unsettled medical information, to which are added the confusing results of original research, new discoveries and fresh observations. The correct expounder of changing medical opinion must possess, above all, the attribute of experienced clinical wisdom, not to be obtained through the possession of the highest degree of technical knowledge nor the retention of a great mass of precise facts, capable of laboratory demonstration, but rather acquired through proper methods of observation, suitable habits of thought and processes of reasoning. These are accorded in a satisfying degree only to the well-balanced and judicial mind, disciplined thoroughly through the medium of an education by no means entirely technical. The ability to select scientific facts with wisdom and discrimination, and to interpret them with accuracy, to recognize error and pretence, to form rational conceptions and to exercise intelligent conservative judgment, requires at present, no less than formerly, a degree of broad and liberal culture in its fullest sense as supplementary to a natural mental endowment.

The proposition is now advanced, Can this intensely practical and vitally important branch of medical education be justly subjected to the elastic principles of the elective system? The question may be said to apply, first, to those contemplating internal medicine, and, secondly, to those anticipating special work. For the future practitioner in internal medicine it must be apparent that the most complete and the best proportioned system of preparatory education is none too good. He has never been trained too thoroughly. It is also insisted that the teaching faculty is by far a better judge as to what should constitute a comprehensive and well-rounded course of instruction in this department. The teaching of internal medicine comprises such various subdivisions of the subject, such diversity of method and such a large staff of instructors, as to allow, under the elective system, a very wide latitude as to the relative amount of attention assigned to the several collateral branches. It is easy to conceive how a student might elect certain of these and be given credit for the required amount of time in internal medicine, and even pass brilliant examinations, yet have sadly neglected other equally important portions of the work.

To preclude this possibility the student should be compelled to devote a certain definite time to each of the various methods and means of instruction, none of which are entirely without their proportionate value. The fact that there exists a wide difference of opinion among teachers of medicine as to the best methods of imparting knowledge to senior classes affords no justification in itself for permitting students to select the manner in which to pursue the study of given subject, but rather suggests the wisdom of demanding at least a degree of familiarity with all branches of the department. A well-balanced and required system of didactic, recitational and bedside instruction, with original conference work according to the seminar method, offers to students the best that can be afforded in undergraduate work.

While the elective system offers opportunity to special students for original and advanced work in medicine, the necessity and practical advantage of this is hardly apparent. The prescribed course during the four years in this department of the modern medical school offers a sufficient degree of advanced study if properly taken advantage of to satisfy the actual demands of the most exacting student. If more than this be attempted along certain lines of undergraduate instruction in medicine, it must be at the expense of other work in the same branch, or else through the sacrifice of even a superficial attention to the so-called specialties. The educated physician in internal medicine should possess at least a general knowledge of the special branches. In view of these considerations there does not seem to exist good and sufficient reason to justify the application of the elective system in internal medicine to those contemplating general medicine.

To what extent shall the prospective specialist be permitted to exercise his prerogative under the elective system as applied to internal medicine before graduation?

It may, perhaps, be the opinion of some medical educators that a certain given course for such students be offered as a minimum requirement, and that by this means more time be afforded for work in their chosen field or for original research. To this, however, objection is here made on the following grounds:

I. That expert practical knowledge in any specialty presupposes and demands a good working familiarity with the theory and practice of medicine, and this is not to be learned any too thoroughly in a completed system of undergraduate work.

II. That the finished work in any specialty should never be attempted in a medical school regardless of its scope or facilities, the only field for the attainment of a sufficient degree of special knowledge to justify practice being found in postgraduate work reinforced by clinical experience.

III. That the demand for original research among undergraduates is more fancied than real, the actual purpose of the student at this time being to absorb much, rather than to attempt to contribute a little.

IV. That in view of the uniformly earlier attainment of social, professional and financial success of the specialist, and greater ease of living, the law of compensation justly requires a much longer period of earnest studious preparation.

V. That the present overcrowding of the profession morally necessitates the imposition of rigid restrictions to graduation as well as to admission and the possession of the highest possible degree of proficiency in order to compete successfully with those unhandicapped by knowledge or conscience.

For these reasons there does not appear in the interests of the would-be specialists any especial necessity for the application of the elective system to this department.

It is hoped that these mere suggestions may sustain the thought that a consistent regard for the highest ultimate welfare of all students and practitioners of medicine requires that the elective system, although of great recognized value as applied to a portion of the course of instruction, yet should bear no considerable relation to the study of internal medicine in American medical colleges.

OBSERVATIONS ON THE IODINE REACTION IN CHILDREN.

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THESE observations were made chiefly with the view to adding to the data already accumulated, on which the diagnostic value of the iodine reaction is based, and also with a view to determining whether the reaction in the diseases in children corresponds with that of similar conditions in the adult. For this purpose a test was made of the iodine reaction in the blood of every child immediately upon admission into the Children's Hospital during a period of three months, and also in all cases where any fresh disease developed during the child's stay in the hospital.

The technique employed was described by Drs. Richard C. Cabot and Edwin E. Locke in an article in the *Journal of Medical Research*, 1902, Vol. vii, No. 1, and further described by Dr. Locke in the Boston MEDICAL AND SURGICAL JOURNAL of Sept. 11, 1902.

In addition to merely noting the presence or absence of the reaction in each case, an attempt was made to estimate the per cent of leucocytes showing the reaction. The figures give percentages of the whole number of white corpuscles noted, not of the polymorphonuclear neutrophiles alone. In estimating these percentages, from one hundred to four hundred leucocytes, according to the presence and amount of leuco cytosis, were counted, and of these, all leucocytes showing a distinct reaction, no matter how slight, were counted in.

The reactions were further classified according to the intensities of the reaction in each individual leucocyte. In cases in which only a brownish discoloration was present the reaction was classified as slight (Sl.). In cases in which, in addition to such discoloration, distinct but small brown granules were visible in any of the corpuscles, the reaction was classified as average (Av.). In cases in which many large brownish granules were observed in any of the cells the reaction was classified as marked (M.), and where any cells were observed in which the large granules were so numerous as to coalesce in brown masses giving a deep brown color to the protoplasm, the reaction was classified as very marked (V.M.).

In addition to the single observation made on each case admitted to the hospital, in certain diseases, notably pneumonia, typhoid fever and cerebro-spinal meningitis, further observations were made during the course of the disease, with a view to determining the frequency and intensity of the reaction in the various stages and the approximate time of its disappearance. Also, for purposes of comparison, a count of the white corpuscles was always made at the same time that the blood was taken for reaction.

LOBAR PNEUMONIA.

Case.	*Age.*	*Stage of Disease.*	*Reaction.*	*Intensity.*	*% Cells Affected.*	*White Count.*
1	4 years	7th day	+	V. M.	80%	21,400
2	7 years	3d day	+	M.	88%	30,900
3	9 years	4th day	+	M.	84%	13,600
4	8 years	5th day	+	M.	80%	30,000
5	17 months	6th day	+	M.	80%	80,100
6	8 months	6th day	+	M.	80%	28,000
7	21 months	2d day	+	M.	74%	60,000
8	5 years	7th day	+	M.	72%	28,200
9	19 months	2d day	+	M.	72%	44,800
10	3 years	2d day	+	M.	70%	21,800
11	2 years	8th day	+	M.	70%	10,700
12	6 years	3d day	+	M.	66%	7,000
13	9 years	2d day	+	M.	46%	31,000
14	2 weeks	4th day	+	M.	30%	
15	4 years	4th day	+	Av.	80%	28,600
16	4 weeks	5th day	+	Av.	76%	19,000
17	10 months	9th day	+	Av.	70%	10,400
18	2 years	4th day	+	Av.	60%	20,300
19	6 years	2d day	+	Av.	54%	22,000
20	7 years	4th day	+	Av.	56%	18,000
21	2 years	4th day	+	Av.	36%	29,300
22	7 years	3d day	+	Av.	48%	19,100

The results in the twenty-two cases tabulated show the presence of the iodine reaction in all. As to intensity, the reaction was average in eight cases and marked in fourteen. The percent of leucocytes affected was almost uniformly high, the average being 70%. We may conclude from these results that in the active stage of lobar pneumonia in children a positive iodine reaction is the rule, such reaction being often marked, and always at least average in intensity, and that the percentage of leucocytes affected is high, being more than 50% in most of the cases.

The following table shows the results of further observations upon some of these same cases taken at various times after the crisis. In those cases where no distinct crisis occurred, the day the temperature reached and remained at the normal point was considered as equivalent to the day of the crisis.

Case.	*Time after Crisis.*	*Reaction.*	*Intensity.*	*% Cells Affected.*	*White Count.*	*Remarks.*
1	4 hours	+	Av.	60%	12,300	
1	4 days	0				
2	10 days	0				
3	3 days	+	Sl.	6%	7,400	
3	4 days	0				
4	5 days	0				
5	10 days	+	Av.	54%	18,300	Consolidation unresolved. Slight fever.
6	10 days	+	Av.	40%	13,400	Consolidation unresolved.
7	1 day	+	Sl.	8%	24,000	
7	3 days	+	M.	84%	28,700	Rise of temperature. Empyema.
8	9 hours	+	Av.	30%	12,100	
8	3 days	+	Sl.	6%		
8	5 days	0				
9	5 days	0				
10	5 days	0				
11	10 days	+	M.	42%		Consolidation unresolved.
11	15 days	+	M.	88%		Consolidation unresolved.
14	4 days	0				
15	3 days	+	Sl.	12%	14,400	
15	5 days	0				
19	2 days	+	Sl.	28%		Consolidation unresolved.
19	6 days	+	Av.	34%		Consolidation unresolved. Fever again for two days.
19	8 days	+	Av.	48%		Consolidation unresolved.
19	10 days	0				Four days after resolution.
20	1 day	+	Sl.	22%	11,800	
20	3 days	0				
21	12 hours	0				
22	2 days	0				

The results of these observations show that in those cases of lobar pneumonia in which quick resolution occurs the reaction becomes rapidly less marked both in intensity and in per cent of cells affected immediately after the crisis, and quickly disappears. It had disappeared in all cases by the fifth day after the crisis, and in one case (No. 21) it had disappeared in twelve hours; hence we may conclude that it may disappear at any time between the crisis and the fifth day. In cases where the consolidation remains unresolved, even with a normal temperature, as in Cases 5, 6, 11 and 19, the reaction may persist for at least ten or fifteen days. Case No. 7 is interesting as showing the behavior of the reaction when empyema develops after the crisis. In this case the reaction which before the crisis was marked, 74%, white count 60,000, became one day after the crisis slight, 8%, white count 24,000. On the third day after, the temperature rose again and before the signs in the chest were sufficiently well marked to warrant a diagnosis, the reaction had become marked, 84%. The increase in the intensity of the reaction was much more marked than the increase in the leucocyte count, which only rose from 24,000 to 28,700.

BRONCHO-PNEUMONIA.

No.	*Age.*	*Stage of Disease.*	*Reaction.*	*Intensity.*	*% Cells Affected.*	*White Count.*	*Remarks.*
1	2 years	?	+	M.	74%	12,100	
2	2 years	?	+	M.	74%	12,100	
3	5½ months	?	+	Av.	74%	32,800	Autopsy, tb. broncho-pneumonia with fresh pneumococcus infection.
4	14 months	?	+	Av.	66%	39,000	
5	1 year	3d day	+	Av.	58%	23,800	
6	6 years	7th day	+	Av.	46%	62,100	Complicating pertussis.
7	2 years	?	+	Av.	40%	31,400	Autopsy.
8	2 years	31st day	+	Sl.	30%	15,200	Slight fever.

The results of these observations are very similar to those obtained in lobar pneumonia, the reaction being present in all cases. The stage of the disease could not be absolutely determined, but all but the eighth case were in the active stage.

INFLUENZA PNEUMONIA.

No.	*Age.*	*Stage of Disease.*	*Reaction.*	*Intensity.*	*% Cells Affected.*	*Remarks.*
1	7 years	3d day	++++	M.	66%	Complicating (pertussis).
2	11 years	3d day		Av.	70%	
3	9 years	11th day		Av.	60%	Complicating (pertussis).
4	5 years	7th day		Av.	26%	

The reaction was present with at least average intensity in all cases, and a high per cent of corpuscles was affected in a majority of the cases observed.

Further observations showed that in Cases 2 and 3 the reaction disappeared on the fourth and third days respectively, after the temperature reached the normal. In Case 1 the disease ran a

very prolonged course, the reaction being average, 30%, white count 12,400 on the twenty-first day. The patient was discharged on the one hundred and fourth day with some fever and several areas of consolidation in the chest. The reaction on the day of discharge was slight, 8%, white count 9,100. Case 4 also ran a long course. The reaction was average, 30%, white count 19,200 on the thirty-first day.

No.	Age.	Stage of Disease.	Reaction.	Intensity.	% Cells Affected.	White Count.	Remarks.
1	2½ years	3d day	+	V. M.	68%	13,300	Severe case.
2	10 months	18th day	+	M.	72%	21,700	Autopsy.
3	3 years	26th day	+	Av.	52%	30,000	Severe case.
4	4 months	3d day	+	Av.	24%	43,300	Mild case.
5	13 months	90th day	+	Sl.	30%	29,600	Chronic relapsing case.

TYPHOID FEVER.

Of ten cases the reaction was positive in nine at some stage of the disease. In one case (No. 8) it was absent on the third day but present on the eighth day, but in all other cases it was present at the first examination, the stage of the disease varying from the fourth to the twelfth day. In one case the reaction was absent on the first examination and remained so throughout the disease. In the uncomplicated cases the intensity was slight or average, and the per cent of cells affected in all but one case (Case No. 6) was under 50%. In the two cases with complications, the intensity was marked and the per cent of cells affected high.

No.	Age.	Stage of Disease.	Reaction.	Intensity.	% Cells Affected.	White Count.	Remarks.
1	9 years	1st week	+	M.	74%	19,200	Comp. with septic pharyngitis.
2	3½ years	5th day	+	M.	62%	9,500	Comp. with Otitis media.
3	3½ years	12th day	+	Av.	40%		No complication.
4	10 years	4th day	+	Av.	40%	4,800	" "
5	10 years	1st week	+	Av.	18%	5,200	" "
6	10 years	1st week	+	Sl.	70%	8,400	Widal-O. No complication.
7	5 years	8th day	+	Sl.	50%	7,000	No complication.
8	5 years	8th day	+	Sl.	32%	10,200	" "
9	6 years	5th day	+	Sl.	8%	5,800	" "
10	7 years	7th day	0			9,000	" "

Further examination on some of these cases made with a view to determine the persistence of the reaction after the temperature reached the normal, were as follows:

No.	Temperature Normal.	Reaction.	Intensity.	% Cells Affected.	Remarks.
3	8 days	+	Av.	18%	Chronic discharging ear.
3	13 days	+	M.	14%	Chronic discharging ear.
3	18 days	+	Sl.	28%	Chronic discharging ear.
3	28 days	0			
4	8 days	0			
6	8 days	0			
7	11 days	0			
8	7 days	+	Sl.	18%	
8	16 days	+	Sl.	28%	
9	10 days	0			

In four uncomplicated cases the reaction disappeared between the eighth and the eleventh day. In one uncomplicated case (No. 8) the reaction persisted until the patient was discharged, on the sixteenth day. In one case complicated with chronic discharging ear the reaction persisted until the twenty-eighth day.

Conclusions. — In typhoid fever in children the iodine reaction is usually present, but may be absent. It is of less intensity and shows a smaller per cent of cells affected than in the pneumonias, but it persists, as a rule, for a much longer time, and may persist for more than two weeks after the temperature reaches the normal.

CEREBRO-SPINAL MENINGITIS.

In all of the following cases the Diplococcus intracellularis was at some time found in the cerebro-spinal fluid:

These observations, though limited in number, suggest that the reaction is always present during the active stage of this disease, and that the intensity and per cent of cells affected show a correspondence with the severity of the symptoms. Case 2 was fatal, Cases 4 and 5 made a complete recovery, Cases 1 and 3 became chronic, and both at the present writing are still totally unconscious with muscular contractions, Case 3 being on the two hundred and fiftieth day and Case 1 on the one hundred and fiftieth day since the onset of the symptoms. Further observations on these cases were as follows:

No.	Stage of Disease.	Reaction.	Intensity.	% Cells Affected.	White Count.	Remarks.
1	19th day	+	Av.	30%	10,400	Still fever.
1	35th day	0			11,200	Temperature normal.
3	36th day	0			24,600	Still moderate fever.
3	113th day	0			18,000	Temperature normal.
4	28th day	+	Sl.	10%	18,400	Temperature normal.
4	35th day	+	Av.	20%	37,200	During relapse of fever.
4	50th day	0			18,000	Temperature normal.
5	120th day	+		86%	44,700	During severe relapse.
5	150thday	0			21,900	Temperature normal.

It would seem that the reaction disappears in cases where the active process, as evidenced by fever, subsides, even in the chronic cases where the child remains unconscious, but that the reaction persists in those cases where there are relapses.

ACUTE MILIARY TUBERCULOSIS.

Of the following cases, in Nos. 2, 5, 7 and 8 the diagnosis was confirmed at autopsy; they had all been diagnosed clinically as tubercular meningitis.

In Case 3 glands excised post mortem were found to be tuberculous.

In Cases 4 and 6 the cerebro-spinal fluid obtained by lumbar puncture was characteristic of tubercular meningitis, but the clinical type of the disease was pulmonary with severe dyspnea and cyanosis.

In Case 7 the disease developed on a chronic pulmonary tuberculosis, tubercle bacilli having been found in the sputum.

No.	Age.	Stage of Disease.	Reaction.	Intensity.	% Cell Affecteds.	White Count.	Remarks.
1	11 years	5th day	+	Av.	34%	5,600	
2	7 months	5th day	+	Sl.	52%	18,000	Two weeks before death.
3	6 years	?	+	Sl.	50%	25,600	
4	7 months	?	+	Sl.	22%	27,500	Four days before death.
5	11 years	?	+	Sl.	12%	16,000	Exam. made twenty-four hours before death.
6	2 years	?	+	Sl.	4%	18,900	Three days before death.
7	4 years	7th day	0			16,300	Three days before death.
8	2½ years	?	0			11,300	Twenty-four hrs. before death.

From these observations it appears that the reaction may be either present or absent. When present the intensity is usually slight, and the per cent of cells affected comparatively low.

ANEMIA.

These cases of anemia were all of the secondary type. In Cases 2 and 3 second observations were made.

No.	Age.	Hgb.	White Count.	Red Count.	Reaction.	Intensity.	Cells Affected.
1	10 months	30%	27,100	2,000,000		Av.	60%
2	3 years	30%	17,800	2,160,000		Av.	34%
2		20%	12,900	1,516,000		Av.	22%
3	2 years	55%	16,000	2,320,000		Sl.	30%
3		65%	14,800	5,008,000	0		
4	2 years	35%	6,000	3,440,000	0		
5	2 years	40%	10,700	4,300,000	0		
6	6 months	40%	6,300	3,500,000	0		

In general from this limited number of cases it would seem that the iodine reaction is present in the more severe anemias, absent in the milder ones, and when present a low per cent of cells is affected. Case 3 is interesting, showing the disappearance of the reaction coincident with improvement in the condition of the blood.

INFLUENZA.

I have included under this heading seven cases, all of which were obviously acute infections, but in none of them was the precise nature and localization of the infection determined. They all presented clinical pictures greatly resembling the ordinary grippe attacks, and they occurred at a time of year when cases of influenza pneumonia were common. In no one of them was a satisfactory specimen of sputum obtained. In all of these cases the iodine reaction was positive and of average intensity. The percentage of cells affected varied between 30% and 66%. Leucocytosis was absent in five cases, present in two.

NEPHRITIS.

The first five cases were acute, the last two of the chronic glomerular type.

No.	Age.	Stage of Disease.	Reaction.	Intensity.	% Cells Affected.	White Count.	Remarks.
1	4 years	?	+	M.	68%	27,600	Complicated with acute follic. tonsilitis.
2	4 years	?	+	Av.	68%	16,600	Complicated with eczema.
3	3 years	10th day	+	Av.	54%	12,700	Severe case.
4	6 years	10th day	0			14,000	Mild case.
5	3½ years	?	0			17,300	Marked edema but no uremic symptoms.
6	7 years	?	0			19,600	Edema. No uremic symptoms.
7	6 years	?	0			17,000	Edema. No uremic symptoms.

From this small number of cases the reaction would seem to be positive in the severe acute cases, absent in the mild or chronic cases.

PLEURISY AND EMPYEMA.

No.	Age.	Stage of Disease.	Reaction.	Intensity.	% Cells Affected.	White Count.	Remarks.
A. WITH SEROUS EFFUSION.							
1	5 years		0			11,300	Fifth day traumatic etiology
2	3 years		0			13,000	Duration unknown. Tb. reaction.
3	9 years		0			13,000	Tb. reaction.
B. EMPYEMA.							
4	5 years		+	M.	88%	29,600	Pneumococcus infection.
5	3 years		+	M.	76%	31,000	Streptococcus infection.
6	2 years		+	M.	64%	20,700	Pneumococcus infection.
7	3 years	+	+	Av.	26%	16,000	Pus, sterile, tb. reaction.

The results in this small number of cases agree with those of Cabot and Locke, based on a larger number of cases. Case 7 is interesting as showing the probable relation between the character of the infection and the intensity of the reaction, and the per cent of cells affected.

FUNCTIONAL INDIGESTION.

Observations were made on seventeen cases of gastric and intestinal indigestion. These included twelve cases in early infancy, so-called feeding cases, and five cases in middle childhood. Of the latter, one was a severe case of gastroduodenitis, with severe jaundice. The iodine reaction was negative in all cases, nor did any of the cases show a leucocytosis.

CHRONIC VALVULAR CARDIAC DISEASE.

Six cases were examined, in all of which compensation was disturbed, in one of which it was wholly broken. The reaction was negative in five cases, slight, 8%, in the sixth case, this being the case of badly broken compensation.

OTHER DISEASES.

The following table (see next page) includes all cases in which only one or only a few observations could be made.

The number of cases in the above table is too few to warrant the drawing of any general conclusions. So far as they go the results agree with those of Cabot and Locke in similar cases.

The two cases of abscess were especially interesting in that the clinical diagnoses were the reverse of what was found to be the case on an examination of the pus. Further observations are needed to determine if a so-called cold abscess can be distinguished from a septic abscess by means of the iodine reaction. The three cases of pericarditis are interesting from the fact that the variation of the reaction seems to agree with

the nature of the cause, the pneumococcus infection giving a very marked reaction with a high per cent of cells affected, and the rheumatic pericarditis giving a negative reaction, the probable tubercular pericarditis being midway between.

The results of the above observations as far as they go are in general confirmatory of the

(2) The reaction is usually present but may be absent in cases of typhoid fever, and miliary tuberculosis.

(3) The reaction may be absent or present in anemia.

(4) The reaction is usually absent but may be present in nephritis, cardiac valvular disease and tuberculosis.

Disease.	*No.*	*Age.*	*Reaction.*	*Intensity.*	*% Cells Affected.*	*White Count.*	*Remarks.*
Abscess (staphylococcus)	1	6 yrs.	+	Av.	84%	21,000	
Abscess (tubercular)	2		0			20,000	
Appendicitis	1	5½ yrs.	+	Sl.	16%	22,000	Three days after first attack subsided.
	1		+	Av.	28%	41,400	Onset of second attack.
	1		+	Av.	20%	27,200	During second attack.
	2	14 yrs.	+	Av.	30%	26,300	Subacute.
Bronchitis (acute)	1	3 yrs.	0			17,600	
	2	2 yrs.	0			15,400	
Bronchitis (chronic)	1	6 yrs.	0			10,700	
Cardiac disease (congenital)	1	6 yrs.	0			12,000	Marked cyanosis.
	2	8 mos.	0			11,800	
Chorea	1	9 yrs.	0			6,000	
	2	12 yrs.	0			8,000	
	3	3½ yrs.	0			12,600	
Diphtheria	1	4 yrs.	+	V. M.	56%	20,400	Most marked in intensity of any obtained.
Eczema	1	3½ yrs.	0			16,100	
Infantile atrophy	1	6 mos.	0			12,000	
Influenza (chronic, bacilli found)	1	3½ yrs.	+	Sl.	8%	9,600	
Osteomyelitis	1	7 yrs.	+	M.	78%	32,000	
	2	9 yrs.	+	M.	86%	33,000	
	3	6 yrs.	+	M.	80%	21,000	
Otitis media (acute)	1	4½ mos.	+	Av.	64%	32,000	Thirty-third day.
	2	3 yrs.	+	Sl.	20%	26,200	Seventh day.
Pericarditis	1	18 mos.	+	V. M.	66%	60,000	Purulent, pneumococcus infection.
	2	9 yrs.	+	Sl.	32%	11,500	Comp. pulmonary tuberculosis.
	3	11 yrs.	0			18,000	Following rheumatism.
Pharyngitis (septic)	1	5 yrs.	+	Sl.	12%	19,600	
Pupura rheumatica	1	9 yrs.	0			11,100	
Rhachitis	1	20 mos.	0			16,200	
	2	20 mos.	0			15,400	
	3	21 mos.	0			7,400	
Rheumatism (acute articular)	1	7 yrs.	0			14,100	
	2	8 yrs.	0			22,600	
Rheumatism (chronic articular)	1	8 yrs.	0			13,000	
Starvation	1	2 yrs.	+	M.	76%	13,400	Acute stage.
	1		+	Av.	44%		After four days.
	1		+	M.	50%		During tb. reaction.
Scorbutus	1	13 mos.	0			18,400	
Tuberculosis							
Adenitis	1	14 mos.	+	Sl.	22%	22,200	With severe second day anemia.
Meningitis	1	5 yrs.	0			22,000	Diagnosis based on lumbar puncture.
	2	4 yrs.	0			19,600	Diagnosis based on lumbar puncture.
Peritonitis	1	8 yrs.	+	V. M.	80%	6,900	Very sick, probable mixed infection.
Pulmonary	1	11 yrs.	0			20,300	Bacilli found in sputum.
	2	9 yrs.				14,200	Tb. reaction+.
	3	3 yrs.	0			14,300	

theory that the iodine reaction is a measure of the degree of toxemia. The observations on cerebro-spinal meningitis, on acute nephritis and on anemia are especially interesting in connection with this point. The single observation in the case of diphtheria gave the most marked reaction in intensity of any I have seen. I have not seen any other observation on this disease. The result is what one would expect in a disease characterized by so very profound an intoxication.

SUMMARY.

A general summary of the results, though necessarily imperfect from the comparatively small number of cases observed, may yet be of some use for comparison with future observations. It would be as follows:

(1) The reaction is always present, usually of average and often of marked intensity, a high percentage of cells being affected in the following conditions: Lobar pneumonia, broncho-pneumonia, cerebrospinal meningitis, influenza (see above), empyema, suppuration (non-tubercular), and was found present in single cases of appendicitis, diphtheria and starvation.

(5) The reaction is absent in pleurisy with effusion, functional indigestion, rachitis, articular rheumatism, congenital cardiac disease, chorea, infantile atrophy and was found absent in single cases of bronchitis, eczema, purpura, urticaria and scorbutus.

Clinical Department.

MIRROR WRITING.

BY CHARLES D. JONES, M.D., BOSTON,

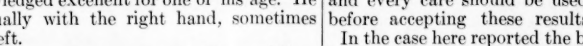
Ophthalmic Clinical Assistant, Massachusetts Charitable Eye and Ear Infirmary; Consulting Oculist, Malden Hospital.

ACCOMPANYING this paper is an admirable specimen of that curious anomaly known as mirror writing. The author was a boy about seven or eight years old who had been referred to me because of his very peculiar handwriting. The eyes were normal and the boy's teacher was assured that the condition would gradually be outgrown. Some months later the boy had accustomed himself to write correctly most of the time; but his teacher, who has kept an intelligent eye upon him, stated that when he became tired or even in some cases confused from

merely changing his seat in school, he occasionally reverted to his old system. The boy is bright and the handwriting, when reversed, will be acknowledged excellent for one of his age. He writes usually with the right hand, sometimes with the left.

In considering the causes of this condition, the various explanations seem altogether inadequate. It is apparently more common in persons having some manifest mental trouble, but also occurs in those of normal mental capacity. In most cases the writing is done by the left hand, and this fact gives a clue to the only explanation offered which is at all rational. Mills, in the Encyclopedia Medica, argues on the supposition that it is left-handed, "that the movements which produce mirror writing . . . are primarily guided from the left cerebral cortex," through some preponderating influence which the left cells have over the right, the result being that the left hand makes movements symmetrical with those made by the right; and mirror writing results because the same muscles (on the two sides) are called into action simultaneously. The author lays some stress in elucidating this theory upon a particularly close association of the two hemispheres of the brain through the corpus callosum. This is a point for the neurologist to settle; it seems to me to afford little light. Even more barren of results are theories which assume that an "image" is formed on the "mind." One writer categorically states that "visual sense alone would give us a world upside down." [1] Physicians as a body have always appreciated less clearly than metaphysicians that the mere fact that the retinal image is inverted, as are all real images, has *per se* no bearing whatever on the final perception of the object. The writers just quoted render the problem even more complex when speaking in this manner: "It may be asked is the image or impression or change in the brain tissue from which the image is formed on the mind reversed like the negative of a photograph; or if a double vision be formed in the visual center, one on the right hemisphere and the other on the left, do the images lie to each other in opposite directions?" After reading such statements and conjectures, it is well to recall to mind plain physiological facts; to remember that the sensation of light is not dependent upon the existence of a retinal image. The following is good: "Some have supposed that this picture [the retinal image] acting upon the sensitive nerve is reproduced on the gray matter of the brain. But there is difficulty in assigning to the sensory nerve a power of producing such an effect as copying a pictorial representation of an object, and it is at variance with the recognized functions of the gray matter to suppose that it is a sensitive surface capable of receiving pictorial impressions." [2] Another author writing upon this question of mirror writing gives a long account of a child who persistently saw things reversed, not only laterally, but even upside down; such is not the experience of persons previously blind who have been suddenly cured, and every care should be used to prevent error before accepting these results.

In the case here reported the boy copied objects, letters and words correctly, writing in the ordinary manner, but wrote mirror writing from dictation.



Mirror writing is said to be not uncommon in England, in one group of 451 the percentage of mirror writers being 5.1. I am convinced it is much less frequent in this country. In several cases which I have been assured were mirror writers, the specimens have proved to be merely those of poor penmanship, due to ignorance and carelessness, and the writing quickly became normal under suitable instruction.

[1] Sweeney: St. Paul Med. Journ., 1900.
[2] Calderwood: Relations of the Mind and Brain.

Medical Progress.

PROGRESS IN ORTHOPEDIC SURGERY.

BY ROBERT SOUTTER, M.D., BOSTON.

HIP DISEASE.

In the last two years there has been considerable work done on hip disease. Most of the literature contains much that is familiar; many noteworthy articles I shall not mention. Some revived old methods, new features in old methods and new ideas on the disease itself.

Koenig,[1] in his extensive work on bones and joints, devotes considerable space to hip disease. Perhaps the most interesting part of his article is the comparison of tuberculosis of the hip and infectious coxitis and the classification of the latter into three groups. His work is well worth reading in detail. There are 568 cases of tuberculosis of the hip, 110 cases of acute infectious coxitis, 30 gonorrheal, 22 arthritis deformans, 20 miscellaneous. In all, the hip observations number 758.

The anatomy of the hip, the development of the bones, the pathology of tuberculosis are treated in detail. In tracing the location of tuberculosis:

(1) Examples of pressure changes on the head of the femur without disease at that point.
(2) Disease of upper part of head and cartilage.
(3) Erosion of the upper head and cartilage called "superficial caries."
(4) Cartilage about the head destroyed completely.
(5) Destruction of the head and cartilage complete.
(6) Disease of the outer part of the head of femur.
(7) Inner part of the head diseased.
(8) Wedge of tuberculosis in the head.

[1] Huft und Kniegelenk, November, 1902

(9) Disease of the epiphysis extending into the neck.
(10) Sequestra formation in the head and neck.
(11) Caries sicca early; caries sicca advanced.
(12) Disease of the socket.
(13) Perforation of the socket.
(14) Spontaneous luxation with focus in pelvis.
(15) Necrosis of epiphysis and cartilage.
(16) Necrosis of the center of the bone.
(17) Focus in the neck only.

In 381 resections he noted the position of the primary tubercular focus. In brief, $\frac{1}{3}$ involves the head; $\frac{1}{7}$ the socket; $\frac{1}{13}$ the neck; $\frac{1}{38}$ the pelvis above the joint; the shaft and trochanter were each the primary focus five times in 381. As to the origin, it was positively primary in 185 cases.

Statistics, 381 resections: 146 involving the head; 187 involving the socket; 28 involving the neck; 5 involving the shaft; 5 involving the trochanter; 10 involving the pelvis above the joint. (p. 29).

Primary disease, 185: doubtful, 94; of the head: primary, 44; secondary, 48; uncertain, 34; neck disease, 28; trochanter, 5.

Socket: primary, 98; secondary, 49; uncertain (as to 1 or 2), 40.

Pelvis: primary, 8; secondary, 2.

Pelvic origin therefore occurred 197 times, femoral, 184.

In tubercular hip disease rotation disappears completely earliest, flexion last, but the disease may be present without loss of motion. It was observed that slight flexion, slight abduction and outward rotation was the position of early tubercular disease, though position only is no guide. Adduction position comes on later and with it inward rotation. Adduction is also the rule in acute cases, but primary adduction in tuberculosis is rare. The primary abduction will not be evident from statistics, for the majority of cases come under observation too late; moreover, in statistics the number of adduction cases is augmented by luxations and later the pathological conditions. These facts are borne out by the following:

Statistics of usual cases: abduction cases, 267; adduction cases, 232; in 68 acute cases 44 were in the position of adduction. Koenig considers disease of the ligamentum teres, granulations on it and in the socket the cause of adduction and of luxations and dislocation.

In 568 cases nearly two-thirds had abscess. Swelling of the joint may occur without abscess, but with abscess the joint is always involved. Origin of abscess is always in the joint.

As to the result of treatment of all cases it is noteworthy that Koenig reports 568 tubercular coxitis cases of which a little less than two-thirds had abscesses. But in 294 conservatively treated cases there were 49 abscesses; one in six. In 118 resections with disease of the socket one-fourth had pelvic abscesses. In another list of 156 resections only 12 did not have disease of the socket.

The temperature curve of tubercular coxitis is characteristic: tubercular curve with slight rise in the afternoon, with low temperature in the morning.

Koenig believes the x-ray very valuable often, but not so valuable in adult hip joints nor in deep-seated disease of the pelvis or socket, whereas in superficial parts and the edge of the socket sequestræ and disease may be made out.

Treatment. — Slight cases: bed with or without extension; later, up with crutches. More severe cases: extension with plaster of Paris fixation. Resection and operation used to be too frequent, but now that the treatment is well understood it is apt to be used too infrequently. Koenig operates in the following conditions:

(1) For abscess.
(2) Where there is severe joint disturbance.
(3) When there is severe shortening due to dislocation.
(4) When x-ray shows a focus distinctly.
(5) Often for fistulæ.
(6) When treatment does not check pyogenic symptoms.
(7) If there is deformity or fistulæ with difficulty in locomotion.

In these cases he rarely tries extension first, but operates, unless pus is very slight.

(8) Resection without abscess is justifiable if after a reasonable period of good treatment pain and swelling and disease does not improve.
(9) Resection is advised especially in adult cases and in the aged.
(10) For ankylosis with outward rotation.

Reposition is not a success. The age of occurrence and the duration are interesting, also the sex, two-thirds being male. Right and left are equally affected.

In 568 cases only 7 with double hip disease, nearly four-fifths were under 15 years of age and one-half 10 years and under.

The following statistics of are interest: 1 to 5 years of age, 152 cases; 6 to 10, 149; 11 to 15, 102; 16 to 20, 60; 21 to 25, 18; 26 to 30, 10; 31 to 40, 15; 41 to 60, 7.

Duration. — Two hundred and fifty-nine, or slightly less than one-half, last one year; 130, or slightly less than one-fourth, last two years; one-fourth slightly less than 3 years; $\frac{1}{13}$ last 4 and 5 years; the longest duration was one of 32 years; — four-fifths of the cases last from 1 to 5 years.

In double tuberculosis of bone in 24 cases, the following facts were observed: Hip and foot affected, 7 times; hip and hand, 3 times; hip and ankle, 10 times; hip and rib, twice; hip and sacrum, once; hip and sternum once.

Of hip tuberculosis and joint tuberculosis: knee, 7 times; foot, twice; elbow, twice, 11 of joint. There were then 24 cases of other bone tuberculosis and 11 cases of joint tuberculosis with hip tuberculosis.

Statistics on the frequency of each abnormal position in deformity, such as abduction with or without shortening; adduction with or without

shortening; shortening with or without abduction or adduction; real or relative shortening, etc., show:

(1) Without abduction and adduction, 27.

(2) Abduction 267, alone 184, with shortening 83.

(3) Adduction 232, alone 68, with absolute shortening 164.

(4) Real shortening alone 24, 164 adduction shortening; 83 abduction, 24 without abduction or adduction.

Another table shows atrophy of resected and non-resected cases, and of resected cases after resection.

Now tubercular hip cases are grouped under acute infectious coxitis, gonorrheal and rheumatoid. The grouping of infectious coxitis is interesting. There are 110 cases. The symptoms differ from tuberculosis of hip in that the onset is sudden and with fever. These vary from mild symptoms to those of severe acute osteomyelitis. The classification is based on pathological rather than the clinical condition into three groups:

I. Synovial coxitis.

II. Ostate coxitis.

III. Acute osteomyelitis of bone about joint.

Group I. — In the synovial form the majority are trivial and limited to the synovial membrane. In acute purulent joints the prognosis is more favorable for children than for adults, both as to the disease and the return of joint function.

Group II. — Ostate coxitis resembles tuberculosis as to the region of bone affected. It is a disease of the joint and of the bones making up the joint. Of 73 excisions in acute coxitis 50 had bad disease of the bone; 15 of these the head and glenoid cavity were diseased; in 14 the glenoid cavity ; in 13 the head alone; in 20 the epiphysis was involved; in 11 the trochanter, with either the socket or shaft.

The difference in the number of cases resected in tuberculosis and infectious coxitis makes it difficult to draw any reliable comparative statistics. Those with involvement of epiphysis of head are not readily classed here. There were three cases of disease of the head and epiphysis without involvement of the cartilage. The symptoms in acute coxitis come on suddenly, with hip pain, immediate and rapid increase of fever and delirium. With the sudden onset there may be chills and typhoid condition. In about two weeks fever disappears, and the disease takes the chronic form, leaving the patient generally run down.

In tuberculosis, abduction and rotation outward was more common. In acute infectious coxitis, adduction and rotation inward is the more common. There were in 68 cases 44 adduction position, 24 abduction position. Rotation outward is usually characteristic of disease of the epiphysis.

Age of occurrence. — One hundred cases: 86 were under 25; one third between 10 and 15; one half under 15.

Statistics. — Ages 1 to 10, 23; 10 to 15, 30; 15 to 25, 33; after 25, 16; under 25, 86.

Group III. — Osteomyelitis of the bones *about* the joint. There are two types:

(*a*) Pelvic ostitis. If operated on early it may not involve the joint.

(*b*) Femoral ostitis. Disease of trochanter or neck. Many of these die, especially when the joint is involved early.

Of the acute infectious cases 80 were operated on and 23 had simple incision for abscess or correction of deformity without incision.

In 72 resected cases 66 recovered; 6 deaths. The incision used was Lagenbeck's long posterior. Cases heal in 6 to 8 weeks. In 72 cases only two fistulæ after 8 weeks.

Broca [2] treates the same subject as Koenig minutely, but uses another classification for non-tubercular coxitis, his basis being clinical.

If there are other joints, or if onset is sudden with fever, he would eliminate tuberculosis, especially without the presence of atrophy or without glandular enlargement or if the recovery is very rapid. He makes no synovial class and the others of Koenig's, but divides the cases clinically into suppurating and non-suppurating, operative and non-operative.

(*To be continued.*)

Reports of Societies.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

SEVENTEENTH ANNUAL MEETING, HELD MAY 12-14, 1903, WASHINGTON, D. C.

(Continued from No. 18, p. 493.)

(SECOND DAY — *Continued.*)

SOME SUGGESTIONS IN THE MANAGEMENT OF PROSTATICS ABOUT TO ENTER CATHETER LIFE.

DR. GEORGE K. SWINBURNE of New York read this paper. He believed that many cases of prostatic hypertrophy were introduced to catheter life, and allowed to use the catheter themselves, who for a longer or shorter period, by judicious management, could be saved from the frequent self-catheterization with its attendant dangers. The cases varied markedly in the rapidity with which the amount of residual urine increased according to the situation of the obstruction, but he said there was one element often overlooked, the superinduced congestion, or rather edema of the surrounding tissue, which increased the obstruction and consequently the amount of residual urine; when this obstruction and consequent congestion had been reduced then the amount of residual urine fell back to an amount due to the mechanical obstruction itself. Many of these patients could be brought back to the condition they were in before the onset of any acute symptoms, and kept there for a varying period of time; they would have nocturnal polyuria and a small amount of resid-

[2] Rev. Orthop. iii, 4, Paris, 1902.

ual urine, but the urine will be sweet and clean and the bladder remain uninfected; then careful dieting, abstemious living, the proper amount of exercise and the local treatment, etc., will cause a lessening of the physician's visits until they would not exceed twice or thrice a month. In those cases in which are found a considerable amount of residual urine, when it would seem dangerous to remove all the urine at a time, it seemed to him a good plan to replace the amount of residual urine with about the same amount of argyrol solution, 1–1,000, gradually diminishing the entire amount, and thus to prevent infection, and to reduce infection by the injection of ½ oz. of a 10% solution argyrol. He claimed that this new salt of silver was non-irritating and had a marked effect in reducing the pain and inflammation; in his hands it had superseded the use of nitrate of silver solutions used for the same purpose. The object of his paper was rather to bring out an expression of opinion as to whether or not it was not often better to carry a patient over as long a period of time as possible before they themselves were allowed to resort to self-catheterization, but also to call attention to the beneficial results that could be had by the use of argyrol as a local urinary antiseptic.

Dr. H. M. Cristian of Philadelphia believed we were drifting back to the conservative treatment in cases of prostatic hypertrophy. The life and happiness of the man now rested in his having a sterile urine; his trouble begins with bladder infection. In the conservative treatment he believed 85% of these lives could be made comfortable and prolonged by proper catheterization. The personal equation should be emphasized in these cases. The drug mentioned by Dr. Swinburne he had used to prevent attacks of cystitis with great benefit.

Dr. Francis S. Watson of Boston liked argyrol very much, and had also received the most brilliant results from the use of a 1% solution of methylene blue.

Dr. E. L. Keyes, Jr., of New York, reported an instance in which the use of argyrol made the patient worse, the drug acting as a strong irritant.

Dr. George K. Swinburne of New York had never noted any signs of irritation from the use of this drug after an experience with it of one and a quarter years.

CANCER OF THE PROSTATE.

Dr. Robert H. Greene of New York presented this communication, and said that he had great difficulty in finding any literature which bore upon this subject. Frequent symptoms were pain, referred to the perineum, to the rectum and to branches of the sciatic nerve; the amount of residual urine had little relation to cancer cases. The average age of all cases was sixty-eight years. The size and feel of the growth as found by rectal touch was of no special diagnostic value. There followed secondary lymphatic infection. Autopsies were made on seventy-one men; in 88% the glands were found to be involved and in about 35% the inguinal glands were infected; in about 3% the axillary glands were involved.

He reported a case of this nature. The patient was sixty years old and had had gonorrhea forty years previous. At Christmas time, 1901, he had retention of urine, and was relieved by catheter. From then on he noticed pain in the right perineal region. There was but little residual urine. Urinary examination was negative. There was no tenderness over the prostate. The bladder was irrigated with nitrate of silver solution and he was given tonics, and all was done that was possible towards improving his general health. The pain continued. He insisted upon an operation. The diagnosis at that time was an abscess of the right lobe of the prostate, or else a small stone encysted in the prostate. The patient was operated upon last June, and the prostate was removed. He claimed that the operation injured his sexual functions. The pathologist reported the right lobe of the prostate to be cancerous. Dr. Guiteras presented some photographs of the case.

Dr. H. M. Cristian of Philadelphia reported a case of cancer of the prostate in which sciatica was a very prominent symptom.

Dr. Eugene Fuller of New York said that cancer of the prostate was apt to involve the bladder wall early, and when it extended beyond we were apt to get sciatica or pains running down the thigh. He said he was rather skeptical regarding the many diagnoses of cancer of the prostate received from pathologists. He thought they erred many times.

Dr. Robert H. Greene of New York said that when we considered the number of times we meet with prostatic hypertrophies and the chronic infiltrations there, we should cease to be surprised at the frequency of cases of cancer of the prostate.

A MEDICO-LEGAL STUDY IN A CASE OF ALLEGED SYPHILIS.

Dr. Abner Post of Boston reported this case to the Association, and asked that your reporter refrain from reporting it on account of possible medico-legal complications that might ensue.

Third Day — May 14, 1903.

DEMONSTRATION OF THE AUTHOR'S COMPOSITE CYSTOSCOPE.

Dr. F. Tilden Brown of New York made this demonstration. With his instrument he was able to irrigate the bladder, make a cystoscopic examination and catheterize each ureter. It was important that the patient occupy the dorsal position upon a table, the lower end of which was elevated.

THE USE OF THE CYSTOSCOPE IN THE STUDY OF PROSTATIC HYPERTROPHY.

Dr. Hugh H. Young of Baltimore presented this communication. He said that the use of this instrument in the study of prostatic hyper-

trophies had been doubted by many, many declaring it valueless. With the cystoscope he had had manufactured one was enabled to study the prostate from every side. The ordinary cystoscope had a right-angled prism. The instrument he had devised enabled one to look backwards. In order to get a view of the entire prostatic orifice it required six different pictures, each picture representing one-sixth of the circle, or 60°. Instead of a compound prism he used a four-sided prism, which enabled him to look backward and view the prostatic lobes. The object of his paper was not to demonstrate his instrument, but to show how it was possible to make an ordinary cystoscopic examination tell us the condition of the prostate in ordinary cases of prostatic hypertrophy. He exhibited a series of charts showing the pictures given by the six different turns of the cystoscope, and demonstrated how one could tell the kind of enlargement from a study of these pictures. He had a series of pictures taken of 120 cases which were of great value to him in his work in this connection. On account of imperfections in the instrument due to poor instrument makers in this country, his results had not been entirely satisfactory.

DR. W. K. OTIS of New York said that one of the principal objects in a cystoscope was to have sufficient room for light, and therefore his instruments were larger than usually used, about 30 F. He believed that a careful and methodical examination of the prostate still required more practical experience in order that an idea might be formed of the conditions presented.

REPORT OF A CASE OF FILARIASIS.

DR. F. TILDEN BROWN of New York reported this case. He said that a mistake in clinical diagnosis had been made in this case, but he was fortunate enough, in the microscopical examination which followed the operation, to find numerous embryos in different developmental stages of what he took to be filaria Bancrofti. The patient's blood failed to show the embryo, and he thought this might in part be explained by the supposition that the orchidectomy had removed all the female worms, if in fact more than one had originally been present. The patient was a German, thirty-four years old, in the United States Marine Hospital Service, and he had been stationed at Porto Rico for the past two years, and had had no fever or illness of any kind. During the past two months he noticed an enlargement and slight tenderness of the left testis. The possibility of its being a barrier to re-enlistment led him to enter Bellevue Hospital, New York City, for operation. Examination showed a moderate enlargement of the left testis, and it was difficult to determine whether the slight but tense effusion in the tunica vaginalis was responsible for the increase in size or not. A small nodule, the size of a marble, slightly tender, was felt where the midbody of the epididymis was apposed to the testis. Which of the two organs it involved could not be determined. The spermatic cord was found to be larger than its fellow. The vas was thicker, but not beaded. He had had no gonorrhea for ten years, and never a swollen testicle from this cause or from traumatism. A diagnosis was made of tuberculous epididymitis, and the patient requested that the testis be removed. At the operation fully an ounce of straw-colored fluid was found occupying the tunica vaginalis. This sac, together with the testicle, the lower one-third of the cord and a considerable more of the vas was removed. Palpation of the specimen now showed a small nodule occupying not the epididymis, but the rete testis just underlying it. In cutting into the lesion a compact fibrous periphery was noted, and in its center a yellowish-white semi-fluid material, somewhat resembling tuberculous débris. A small amount of the adherent material was placed upon a slide and, when examined microscopically for tubercle bacilli, small wormlike forms were seen. Another slide treated with eosin glycerin showed a number of field clusters of lumbricoids having the characteristics of the filaria sanguinous hominis. The larvæ were granular and surrounded by a loose fitting hyaline membrane. Immature forms were of oval shape, and the intermediate forms showed the embryos coiled and doubled in a larger oval sac. Dr. Brown concluded that when cutting into the nodule he may have opened a dilated lymph vessel or space, the abiding place for the adult female filaria; the knife had probably severed this worm in several places, and in scraping it the uterine canals had been compressed and more or less emptied of their contents, and this might account for the great number of embryos found in the different developmental stages.

REMARKS ON SURGICAL TREATMENT OF CHRONIC BRIGHT'S DISEASE BY RENAL DECAPSULATION.

DR. RAMON GUITERAS read this paper. He said that through the efforts of Dr. George Edebohls an operation for the treatment of chronic Bright's disease had been launched, and has caused general interest among surgeons both in America and Europe.

This operation consisted either in partially decapsulating one or both kidneys, and fastening the denuded surfaces to the posterior abdominal wall, or of fully decapsulating these organs and replacing them in their fatty capsule. The former of these procedures had been in a great measure superseded by the latter, although in his mind there was still a question as to which was the better. At a meeting of the American Genito-Urinary Association, held in Atlantic City last year, he had presented a paper entitled, "The Operative Treatment of Chronic Bright's Disease," in which he had reviewed the literature of total decapsulation, and had reported two cases of his own, one of total decapsulation, the other of partial stripping of the capsule, together

with fixation of the organ to the abdominal wall. He had begun work last year as a skeptic, and had refused to operate upon many cases referred to his hospital wards, which he would now consider deserving of operative interference. His experience and the growing favor with which this operation was regarded by many of the leading surgeons led him to send a circular letter to the leading surgeons in order to ascertain their experience in this line of renal work. From the answers that he received from about one hundred and fifty of these letters, the surgeons were about equally divided *pro* and *con* on the operation. The theory as to the benefit to be derived from this operation was that the circulation of the kidney was increased by forming an anastomosis with the tissues of the abdominal wall or the fatty capsule, and thus functional activity was materially aided. Some went so far as to argue that the kidney after this operation could be compared with the lungs, as in these latter organs the bronchial arteries and the pulmonary anastomose and some of the return venous blood from the bronchial vein emptied into the pulmonary veins. Whether or not a corresponding result was obtained in the kidney would be considered later in concluding. The conditions which were considered favorable for the operation were movable kidney with casts and albumen, movable kidney associated with nephritis, chronic interstitial nephritis and diffuse nephritis. Over one hundred of these cases had been reported, 16% of which had been spoken of as cured, 40% as improved, 11% unimproved and 33% died. The cases which were most unfavorable for this procedure were those of chronic diffuse nephritis, of which there was a mortality of 75%. Many of these patients were operated upon *in extremis*, when they were suffering from general anasarca. Nearly all of them had been suffering from uremic symptoms, while 75% of them were edematous. Many cases of albuminuria and cylindruria were not properly speaking Bright's disease, although if the causes that produced them were kept up long enough chronic nephritis might occur. Movable kidney was often associated with this condition, as there was a congestion present due to the tension on the renal vessels. This might be absolutely cured by nephrolexy. In order to have a true nephritis we must have an inflammation or degeneration of the blood vessels, interstitial tissue, the glomeruli or the linings of the tubules of the kidney. Such changes always occurred in both kidneys, although they might vary in degree in different organs. This was a generally acknowledged fact by pathologists, and had been proved by Kümmel and Strauss in their investigations by means of urethral catheterization. He had looked over the records of five hundred autopsies ascribing deaths to chronic Bright's disease, and in not one instance could it be said that the nephritis was unilateral, and in only one had the reports indicated that one organ was more involved than the other.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

SECOND SEMI-ANNUAL MEETING, HELD IN NEW YORK CITY OCTOBER 13 AND 14, 1903.

FIRST DAY, TUESDAY, OCT. 13.

THE meeting was held in the New York Academy of Medicine, under the presidency of DR. A. T. BRISTOW of Brooklyn.

HEPATIC DRAINAGE.

DR. J. B. DEAVER of Philadelphia, Pa., read this paper. He said that it was important to remember that the infection rather than the calculi was concerned in causing most of the mischief. These cases were not unlike those of appendicitis, at least in their relation to the surgeon. In addition to medical treatment, it was absolutely necessary to remove the obstruction and establish hepatic drainage. He had never regretted having done a cholecystostomy, though sometimes he had wished he had not done a cholecystectomy. If there were any suspicion of liver infection, free drainage of bile must always be secured. Dr. Deaver drew the following conclusions: (1) Suppurative cholangeitis should be operated on before infection had damaged the hepatic cells and before the retained bile had reacted injuriously on the system. (2) Cholecystotomy was the operation of election when the lesion was acute and the gall bladder had been functionating hitherto. (3) When there was calculous cholecystitis, with obstruction of the cystic duct, hepatic drainage was demanded, and this was especially true if infection were present or suspected. (4) Whenever there was any doubt, the surgeon should drain. (5) Abscess of the liver would be prevented and pancreatitis relieved by a prompt resort to such drainage.

DR. A. VAN DER VEER of Albany agreed with the author's views as to drainage. He had had good results from posterior drainage down though the peritoneal pouch.

DR. GEORGE R. FOWLER of Brooklyn cautioned against being too radical in the effort to secure direct drainage from the hepatic duct, because in the great majority of cases a successful issue would follow merely draining the gall bladder itself. From the mechanical standpoint, posterior drainage was excellent, but its practical execution was often most difficult.

THE TREATMENT OF CERTAIN CLASSES OF THE UNDERFED.

DR. W. S. ELY of Rochester considered in this paper a class of persons who could be persuaded with difficulty to take sufficient nourishment. Such persons should be placed in a hospital under proper discipline, and then should be treated by rest and a diet of milk and raw eggs. At the commencement the patient might be given 4 to 8 oz of chocolate with two raw eggs alternately every two hours, and the effort should be to give in the twenty-four hours one quart of

chocolate, one quart of milk and six raw eggs. He had never yet seen among this class of persons a single individual who could not take milk with benefit. It must be expected that the tongue will be more or less coated, and no gain should be looked for the first week. The tendency to constipation should be counteracted by giving from six to twenty tablets of rhubarb daily. Under this treatment it was not uncommon to see the patient gain from one to three pounds a week for ten or twelve weeks, and this increase in flesh would be accompanied by improvement in digestion and in the general appearance. It was well to remember that if the physician had not the courage of his convictions, he should not undertake to carry out such a course of treatment, for, it would, in all probability, end in disappointment.

DR. EDWARD B. ANGELL of Rochester said that while he had formerly made use of this method of treatment he had latterly been more in favor of so arranging the regimen that the patient would have enough exercise to secure the much-needed oxygenation of the blood. He had been studying the blood pressure, and had learned that, contrary to the statements in the books, these cases were apt to show a marked reduction in the blood pressure.

FACULTIES OF THE MIND, NOT UNDERSTOOD AND NOT USED, WITH SPECIAL REFERENCE TO THE CURABILITY OF EPILEPSY.

DR. M. A. VEEDER of Lyons presented an interesting, but theoretical, consideration of the subject.

VACCINATION AND THE LAW.

DR. NELSON G. RICHMOND of Fredonia read this paper. He said that a good deal of difficulty had arisen in interpreting the law regarding the vaccination of school children in cases in which repeated vaccination had proved unsuccessful. In this connection it was well to remember that the number of so-called immunes was becoming steadily less, and that not infrequently a vaccination would not "take" until several attempts had been made. A letter was read from Dr. John Thompson of Edinburgh, in which the opinion was expressed that the famous "conscience clause" in the English law had really accomplished the purpose for which it was intended, *i. e.*, a weakening of the opposition to vaccination.

DR. A. JACOBI of New York insisted that he had the right, as a citizen, to demand that the state should protect him by compelling his neighbors to be vaccinated.

OTITIC SEROUS MENINGITIS; LUMBAR PUNCTURE; RECOVERY.

DR. FRANCIS HUBER of New York read this paper. Lumbar puncture was done on two successive days, and improvement quickly ensued. By the end of three weeks the child was practically well. No tubercle bacilli were found in the cerebrospinal fluid.

DR. A. JACOBI thought this case was probably one of serous meningitis, and that there was no connection between this and the mastoid disease.

SYMPOSIUM ON THE ROENTGEN RAY — THERAPEUTIC USE.

DR. A. D. BEVAN of Chicago took this for the topic of the opening paper of this symposium. He directed attention to a novel and very interesting observation, *viz.*, that the internal use of iodide in conjunction with x-ray had proved potent for good in blastomycetic dermatitis. With regard to the use of the Roentgen ray in tuberculosis outside of tuberculosis, he could only say that this form of therapy was promising. The x-ray seemed to possess a selective action on the epithelial cells of epithelioma, and if the latter were situated within one centimeter of the surface, the mass would melt down and become absorbed under the influence of the Roentgen ray. The method was particularly applicable to growths about the lip and eyelid where removal by the knife would cause deformity, but in all other forms of carcinoma, particularly if rapidly growing, deeply situated or of considerable extent, the growth should be removed by the knife, and then a course of about twenty x-ray exposures given. The speaker suggested that perhaps by some modification of the treatment, such as the use of iodine or arsenic, it might be possible to so lower the vitality of the cancer cells as to bring them within the sphere action of the Roentgen ray, even though the cancerous growth were quite deeply situated.

DIAGNOSTIC VALUE OF THE ROENTGEN RAY.

DR. C. L. LEONARD of Philadelphia, Pa., read this paper. In it he paid particular attention to the use of the Roentgen ray in the diagnosis of calculus of the kidney and ureter. He said that out of 300 observations of this kind, the presence of calculi had been demonstrated in 28%; that in 50% of the latter the calculi were in the ureter, and that in 19 of the ureteral cases the calculi were passed spontaneously in accordance with the advice to postpone operation because of the result of the x-ray examination. Dr. Leonard pointed out that the variations in the vacuum of the tube, which occur in most x-ray tubes, led to penetration of the calculi and a disappointing result. He personally made use of a self-regulating tube which would maintain the vacuum at the same point throughout the entire exposure.

FURTHER OBSERVATIONS UPON THE TREATMENT OF SARCOMA WITH THE ROENTGEN RAY.

DR. W. B. COLEY of New York was the author of this paper. He stated that in the past year and a half there had come under his observation at the General Memorial Hospital 103 cases of malignant growths in which the Roentgen ray had been used. There were 30 recurrent carcinomata of the breast, 42 inoperable sarcomata and 25 superficial cancers. In only one of the 30 recurrent cancers of the breast had a deeply

seated growth disappeared under the Roentgen ray. Theoretically, the use of the x-ray to prevent recurrence was most promising, yet his own experience had not realized these expectations. The use of the Roentgen ray before surgical operation was dangerous, not only because it deceived the patient and encouraged delay in submitting to operation, but because after such treatment the operating surgeon could not determine the true limits of the growth. In Pusey's recent book the statement was made that 77% of cases were apparently cured by x-ray treatment, but the statement was misleading, because only 7 of the patients had gone over eight months, and only one beyond fifteen months since the treatment.

Dr. George G. Hopkins of Brooklyn thought his experience warranted him in stating that the x-ray was capable of curing the majority of cases of carcinoma of the breast.

Dr. W. E. Ford of Utica said that his observation of the effects of x-ray treatment in hospital led him to believe that the most it could do was to arrest for a time the growth of cancer of the breast, and that it absolutely failed in uterine cancer.

Dr. A. Van der Veer of Albany emphasized the value of the x-ray treatment as a means of affording relief to these sufferers.

Dr. Bevan thought it was possible to make a diagnosis of renal calculus in 90% of the cases by a proper use of the Roentgen ray. Better definition would be secured if the x-ray exposure were made through an aperture in a sheet lead shield, thus excluding extraneous rays. Similarly, the skiagraph should be examined in a darkened room, the light only entering through the plate, and the observer standing at a distance of about twenty feet and using a good opera glass.

Dr. Leonard said that he took care, when adjusting his apparatus, to see that the shadow of a possible calculus would not be superimposed on that of the bones of the pelvis.

Dr. Coley thought that statements like that made by Dr. Hopkins should not be allowed to go unchallenged, for, so far, there was not one well-authenticated case on record in which the x-ray alone had effected a cure of malignant disease of the breast.

RADIUM IN MEDICINE.

Dr. Samuel G. Tracy of New York presented in this paper a brief sketch of the physical, chemical and physiological properties of radium.

THE LEGAL STATUS OF THE ROENTGEN RAY.

Hon. William W. Goodrich, Presiding Justice Appellate Division, Supreme Court and Judicial District, delivered an address on this topic. He said that the first time x-ray photographs had been admitted as legal evidence was in Colorado in 1896, but that they had since been admitted in several states. In Kings County a complete x-ray apparatus had been exhibited in court. The competency of such evidence depended upon the science, skill, experience and intelligence of the party making the x-ray photograph and testifying.

SPECIAL MEETING OF THE STATE SOCIETY.

A special meeting of the State Medical Society was called for the evening of Oct. 13, to consider what should be done towards bringing about the unification of the profession of this state. A large and representative audience was present. After reviewing the situation, the president, Dr. A. T. Bristow, said that the State Association had recently appointed a committee of conference with full power, and had requested the State Society to give its committee similar power.

Dr. D. B. St. John Roosa of New York then moved the adoption of the following resolution:

"*Whereas*, The New York State Medical Association, at a recent special meeting, duly assembled, has, by unanimous vote, appointed a committee with full power to meet with the similar committee of the Medical Society of the State of New York to arrange for the unification of the two organizations under the corporate name of The Medical Society of the State of New York; Therefore be it

"*Resolved*, That the committee of conference of the Medical Society of the State of New York, already appointed, be given power equal to, and commensurate with, the powers recently granted the committee created by the New York State Medical Association for the purpose of unifying the two State Medical Societies into The Medical Society of the State of New York."

The motion was seconded by Dr. Willis G. MacDonald of Albany and the resolution was unanimously adopted amid great enthusiasm.

Second Day — Wednesday, Oct. 14.

THE NEW YORK STATE HOSPITAL FOR INCIPIENT TUBERCULOSIS.

Dr. Willis G. MacDonald of Albany described the hospital and exhibited plans of the same. The construction was quite novel, but retained all the advantages of the cottage plan, while providing, by a system of isolated apartments, the necessary protection from the rigors of the Adirondack climate. As regards the amount of sunshine, the speaker said that it had been determined by actual survey that, on the shortest day of the year, the sun would reach the porch at 8.45 A.M. and would not leave that porch entirely until 4.45 P.M. The base line of the hospital was 1,639 feet above the sea level. Patients would be placed in single rooms until sufficiently improved to make it proper for them to be placed in the small dormitories. When they were thoroughly convalescent they would be placed in a camp where, for about nine months of the year, they would live in tents or open barracks. While there was abundant sleeping space for 108 patients in the hospital, it was estimated that by the method of distribution outlined above, from 160 to 180 patients could be accom-

modated, the necessary room in the very cold months being secured, if need be, by temporarily refusing to admit new patients. The hospital, although larger than the Adirondack Sanitarium, and well constructed, would cost only $212,000, or less than half that of the sanitarium.

(To be continued.)

Recent Literature.

Portfolio of Dermochromes. By PROFESSOR JACOBI of Freiburg im Breisgau. English adaptation of text by J. J. PRINGLE, M.B., F.R.C.P., Physician to the Department for Diseases of the Skin, Middlesex Hospital, London. London and New York: Rebman, Limited. 1903.

Two of the four proposed parts of this atlas of the more common skin diseases have been published and lie before us. The avowed object of the work is not to depict the rarer forms of cutaneous disease, as is the aim of many atlases, but "to furnish to medical men, teachers and students a handy and comprehensive series of illustrations of the skin diseases most frequently met with in practice." The process employed is known as Citochromy, invented by Dr. Albert of Munich. Most of the illustrations are pictorial reproductions, by means of the process above mentioned, of models in the Breslau clinic, lent by Professor Neisser. They are, for the most part, very faithful counterparts of the diseases they represent, and the color scheme is lifelike. A few, *verruca necrogenica*, for example, are slightly disappointing. On the whole, the two parts already published are to be greatly commended. The announcement refers to the moderate subscription price, which it is thought will bring the work within the reach of all general practitioners and students.

A Chart of the Three Great Systems. Arterial, Venous and Nervous, together, in a Full, Living Human Figure. Lithographed in Five Colors.

As implied in the title, this chart, some two feet in width by three feet in length, is intended to represent graphically the course of the arteries, veins and nerves, together with a certain number of the internal organs. Bordering the human figure, upon which these anatomical structures are represented, is a brief descriptive text. Such a chart has a certain value in representing topographically the relations of these important elements of the body. It is, however, open to criticism from the fact that rather too great a complexity of detail has been introduced in representing particularly arteries and veins. The chart is to be recommended as a ready means of refreshing one's memory on certain anatomical points, but we can hardly agree with the prospectus, which suggests that it is suitable for use as a picture in the office or waiting room of a physician.

THE BOSTON

Medical and Surgical Journal

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THE THERAPEUTIC POSSIBILITIES OF RADIUM.

ALTHOUGH it is as yet too soon to say with certainty what the future possibilities of radium and allied substances are to be in therapeutics, it is evident, from the extraordinary properties of these substances and the experiments which have already been made, that we may look in the near future for positive practical results. Since the discovery of radium and polonium in 1898 by Professor and Madame Curie, naturally a great amount of work has been done in determining the properties of these hitherto unknown substances. The enormous expense of radium, owing to the highly adulterated state in which it is found, and the consequent difficulty of obtaining a pure product, has prevented as yet experiments on a large scale. There can, however, be no question that the resources of scientific laboratories will be brought to bear in such a way that the substance may be produced in sufficient quantities to render general experimentation possible.

Up to this time it appears that radium has certain qualities hitherto unknown to chemical physics. For example, it gives out heat constantly, and is the source of a high degree of energy. It is capable of rendering active, substances with which it is brought into contact; it has marked physiological effects; it is fatal to life under certain conditions; and finally it is apparently curative of certain pathological conditions. An idea of the energy of radium may be had from the statement made by Professor Curie that it maintains its temperature at 1.5° C. above its surroundings, which is equivalent to saying that the heat evolved from pure radium is sufficient to melt more than its own weight of

ice every hour. The facts that this evolution of heat is constant, and that radium loses none of its activity in consequence of its emanation, are the matters of interest confronting the scientific world. The character of the rays given off from the substance is as yet somewhat undetermined, but at least three varieties have so far been distinguished. In consideration of the extraordinary properties to which we have alluded, it is not a source of wonder that animal life is positively affected by the presence of the substance. Animals exposed to the salt contained in a closed tube succumb to its effects in varying periods, depending upon the time of exposure, after undergoing certain cutaneous and nervous changes. Apparently, also, the salt is capable of checking the normal development of the lower forms of animal life, as, for example, preventing the transition from the larval to the adult form in certain worms.

All this suggests at once the possible danger in the therapeutic use of the substance, and also its utility when properly controlled. Naturally experiments up to this time in treatment of diseased conditions have been few, owing to the very great difficulty of obtaining the substance. In the *British Medical Journal* for July 25, Mr. John Macintyre writes briefly in continuation of a previous article on work which he has done. He found that lupus and rodent ulcer were very favorably affected by exposure to the rays. Mr. Frederick Soddy also suggests the possibility of applying the rays of radium and thorium to the treatment of consumption. The theory being that inhalation of radium solution gives rise to the formation of a film of radio-active matter which persists for a certain definite time, it is conceived possible that radium would continue to exert its activity in the air cells of the patient's lung after the emanations themselves had been exhaled.

All this is to a certain extent theoretical as yet, but, in view of the extraordinary impetus which has been given to the therapeutic action of various little understood rays and emanations by the introduction of the x-ray, we have no right to assume any other attitude than one of expectant anticipation. It is perfectly clear that radium and the various substances which apparently are related to it have a definite physiological action on animal tissues. Tnis being the case, it remains, as in other therapeutic matters, to determine sharply between the limits of danger and benefit. That this will be done experimentally in the near future, there can be no reason to doubt, and we are certainly not too optimistic when we express the belief that new and serviceable therapeutic agents, through such investigations, will be found for a goodly number of human ills.

BEHRING ON TUBERCULOSIS.

We have referred in our columns to the experiments which Behring has recently carried on in the immunization of calves to tuberculosis. At the annual meeting of German Scientists and Physicians held at Cassel in September last, Behring amplified his views to a considerable extent. He again reported unqualified success in the vaccination, as he terms it, of young calves against tuberculosis by the injection of attenuated cultures of living human tubercle bacilli into their veins. His methods have been adopted on many large estates in Germany and Austria, and the demand for material has outgrown his capacity to furnish it, so that henceforth it will be put on sale. This method of immunization has recently been confirmed in Koch's Institute. Behring is confident that the extermination of tuberculosis in cattle is simply a matter of time.

The universality of tuberculosis received much emphasis from the speaker. He quoted Naegeli's observations in Zurich. Naegeli was able to demonstrate tuberculosis at the autopsy table in all bodies above the age of thirty. This is in striking harmony with Franz, who proved the presence of the disease in sixty per cent of the cases which he tested with three milligrams tuberculin and in ninety-six per cent of the cases tested with ten milligrams. In thickly settled communities practically the whole adult population is tuberculous. But tuberculous infection does not mean consumption. The case is analogous to diphtheria before the antitoxin days — the mild cases lived, the severe died.

Infection takes place in infancy. The gastro-intestinal tract of infants, as of young animals, lacks protective qualities and allows the passage of tubercle bacilli. Those entering the body are stored away till a favorable opportunity for further development offers, which is afforded by lowered vitality and unhygienic modes of life. Convalescence from the acute exanthemata and injuries to the mucous membrane afford chances for later infection. In Behring's opinion infection by inhalation is unimportant. Behring hopes eventually to take advantage of the easy permeability of the infantile digestive tract by

immunizing infants with the milk of highly immunized cattle. As yet he has done no work in this direction.

Behring takes issue with Koch by asserting that the human and bovine forms of tubercle bacilli are simply different grades of the same species. He therefore further believes that the greatest care should be exercised in securing milk which is uncontaminated with tubercle bacilli. He points out how easily it may become infected. The prevention of the spread of tuberculosis, according to Behring, depends on the precautions taken to get pure milk and the annihilation of bovine tuberculosis. These two measures attained, sanitaria will become superfluous.

THE AMERICAN SOCIETY OF CLINICAL SURGERY.

THE American Society of Clinical Surgery will hold its first meeting in Baltimore and Philadelphia on Nov. 13 and 14.

The methods proposed by this new organization should prove interesting and instructive. Among medical societies they are original, so far as we are aware. For many years it has been growing increasingly evident that the old-time didactic lectures were inefficient in themselves properly to train students for practice. Supplementary clinical exercises and practical, personal instruction have come in large measure to supplement the old-time lectures.

With that thought as their guide a number of surgeons throughout the country have formed this new society for mutual improvement in surgical practice and teaching. As the letter of announcement states, these objects shall be sought by affording members opportunities of demonstrating actively and personally advances in surgery and of showing the results of recent work, clinical, pathological and of any other nature susceptible of demonstration; the meetings shall be broadly clinical, and few if any formal communications shall be allowed.

For some years back we have been wont to see active surgeons making annual pilgrimages about the country, visiting the clinics in various centers and keeping in touch with the best work of the broader community. So the new society will become for such men a labor-saving device. They will travel about in the companionship of their fellows, and in the towns visited the best work only will be shown for their inspection: operative procedures; new technique, laboratory methods, — anything of that nature which lends itself to demonstration. It should all be interesting and practical, and stand beyond peradventure for work actually accomplished.

It is proposed to hold two meetings yearly, in November and March, each meeting to last from two to four days; and the meetings are to be migratory, the members passing from one neighboring town to another on successive days.

The experiment is a novel one, and its progress will be watched with interest.

MEDICAL NOTES.

AMERICAN PUBLIC HEALTH ASSOCIATION. — The next annual meeting of the American Public Health Association will be held in Havana.

THE COST OF TYPHOID FEVER DURING A CAMPAIGN. — It is estimated that the cost to the British Government of typhoid fever during the South African campaign was not less than £4,000,000. This calculation is on a basis of 31,018 cases and each case as occurring in the cheapest trained infantry soldier. Of this total, 6,172 died ; 15,120 were invalided home ; 9,726 convalesced in South Africa.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Nov. 4, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 63, scarlatina 20, typhoid fever 21, measles 80, smallpox 0.

ACCIDENTAL POISONING AT THE TEWKSBURY HOSPITAL. — During the night of Oct. 27 eleven inmates of the State Hospital at Tewksbury accidentally took belladonna in dangerous amount. Careful investigation is being made of the accident, and Dr. Nichols, superintendent of the hospital, has made the statement that the patients received prompt medical aid and that no fatalities have resulted. The patients will undoubtedly recover. Dr. Nichols very wisely declines to make statements in the matter, pending a proper investigation.

LOSS OF LIFE IN GLOUCESTER FISHING FLEET. — It is reported that 75 lives and 6 vessels have been lost in the Gloucester fishing fleet during the last year, with a total financial loss of $82,500, partially insured. Of the 75 men lost 20 left widows with an aggregate of 49 children. It is furthermore stated that during the past twenty-five years upwards of 2,300 lives have been lost, and that since 1830 over 5,000.

Officers of the Massachusetts Charitable Eye and Ear Infirmary. — At the annual meeting of the Massachusetts Charitable Eye and Ear Infirmary, held Oct. 27, the following officers were elected: President, Dr. George B. Shattuck; secretary, Robert Homans; treasurer, Augustus Hemenway; executive committee, George P. Gardner, Charles Lowell, William H. Seabury; finance committee, Charles P. Curtis, Charles Lowell and Francis L. Higginson.

A Unique Bequest. — It is reported that the Northampton Insane Asylum has recently acquired a fund of $500, left in the will of a former inmate, the income of which is to be used to buy tobacco for inmates. The hospital is said to have accepted the conditions of the bequest.

NEW YORK.

Shoe Leather Cure for Consumption. — A good illustration of the efficacy of the "shoe-leather cure" for consumption, which may be commended to other patients in suitable instances, is afforded in the case of a gentleman pronounced to have pulmonary tuberculosis who recently arrived in New York after walking all the way from San Francisco. During his tramp of three thousand miles, which occupied a little more than two years, he wore out sixty-one pairs of shoes. The result appears, however, to have been eminently satisfactory, as it is stated that he is now "a well man, with increased weight, good digestion, firm muscles and clear brain."

The Ms. of "Ten Thousand a Year." — By the will of the Rev. Edward Walpole Warren, late rector of St. James' Protestant Episcopal Church, New York, which has just been filed for probate, the original manuscript of the famous novel, "Ten Thousand a Year," by his father, Samuel Warren of London, is left to his son, A. Kennedy Warren, as an heirloom. Under the terms of the bequest the latter is forbidden to sell the manuscript without the consent of the other children, and then only in case of necessity. If that necessity arises, the British Museum is to have the first opportunity of purchase.

Damages for Railroad Injuries. — In the suit of Catharine Reddy of Yonkers on the Hudson, against the New York Central Railroad for $100,000 damages, which has been on trial before Judge Gaynor of the Supreme Court at White Plains, Westchester County, the jury on Oct. 26 brought in a verdict of $50,000 for the plaintiff. This is said to be the largest verdict ever rendered in the State of New York to a woman for railroad injuries. Mrs. Reddy was badly injured in a wreck on the New York Central at Fancher, a town near Niagara Falls, and had to be carried into court on a chair.

The Pure Food Law. — With a view to expediting the examination of goods under the pure food law, it has been determined by Dr. Wiley, after a conference with the Treasury Department officials, to detail two experts for this work in New York. One of these is to select samples of goods liable to adulteration, and the other will make the necessary tests in the laboratory connected with the New York Custom House.

Obituary.

IN MEMORIAM — M. F. PILGRIM, M.D.

At a meeting of the Faculty of the New York School of Physical Therapeutics, the following resolutions were unanimously adopted:

Whereas, Death has removed from us our esteemed associate and confrère, Dr. Maurice Fiescher Pilgrim, whose faithful service as a teacher in the school, marked by keenness of thought, earnestness of conviction, honesty of purpose, loyalty and kindness of personality endeared him to all his fellow workers.

Be it resolved, That we, members of the Faculty of the New York School of Physical Therapeutics, extend to his bereaved family and friends sympathy and condolence, and, in token of this esteem, the secretary be instructed to forward a copy of these resolutions to his family, and to forward them for publication in *The Journal of Advanced Therapeutics, New York Medical News, American Medicine, Journal of the American Medical Association, New York Medical Journal* and *Boston Medical and Surgical Journal*.

Hermann Grad, M.D.,
Secretary.

Miscellany.

DYSENTERY AND ITS RELATIONSHIP TO TYPHOID FEVER.

In August, 1900, the British Secretary of State for War appointed a commission to go to South Africa and investigate the nature, pathology, causation and prevention of dysentery and its relationship to enteric fever. The investigation was divided into two parts: (*a*) laboratory work; (*b*) inspection of camps, water supply, etc.

The following are the conclusions under Division One (*a*) of the investigation:

(1) Dysentery in South Africa is not caused by amebæ, as there is some reason to believe is the case with the dysentery of certain other countries.

(2) That the organs in dysentery are abso-

lutely sterile. It is a local disease attacking the mucous and sub-mucous coats of the large intestine, and unlike enteric fever, the causal agent, if any, confines itself to the intestines.

(3) That in the large intestines no particular species of micro-organism stands out prominently as in the case of cholera, so that it is impossible in the present stage of the investigation to say that any special bacterium plays a prominent part in the causation of dysentery.

(4) That there is not sufficient evidence in this work to bring forward the theory that some of the normal inhabitants of the intestines belonging to the coli group take on a pathogenic power.

(5) That there is no connection between dysentery and enteric fever. Eberth's bacillus is not found in the organs or intestines of dysentery.

(6) That there is a certain amount of evidence to show that so-called cases of dysentery following enteric fever are relapses of enteric, where the disease has attacked the large intestine.

Under the Second Division (*b*) of the investigation we find the following summary of views as to the probable causes of the prevalence of enteric fever and dysentery in the army of South Africa:

(1) That in the absence of a fuller knowledge of the nature of dysentery, it is sufficient to regard both this disease and enteric fever as being essentially filth diseases, and both due to bacillary organisms intimately associated with and given off by the excretory products of men and animals. Further, that as far as their general etiology is concerned, both diseases may be considered to have a common origin.

(2) That the prevalence of enteric fever and dysentery among the troops in South Africa cannot be explained as being due in all cases to any one specific insanitary condition, but that various conditions contributed to the incidence and dissemination of these diseases in different places.

(3) That in some places these diseases were carried by the use of foul water (notably water from public supplies) which had been polluted, not only by the excreta of men and animals, but also by the decomposing bodies of animals.

(4) That in many places where enteric fever and dysentery were specially prevalent, the condition of the water supplies was insufficient to explain the occurrence of these diseases, but that in those cases it could be accounted for by the influence of close aggregation of men and animals in small encampments, fouling of the soil, the occurrence of personal infection, the effects of the swarms of flies which covered food, the men themselves, their clothing, and haunted the latrines and other places for disposal of refuse.

(5) That the influence of impure water, aggregation in crowded camps, fouling of soil, the prevalence of flies as carriers of specific filth, was accentuated by the preponderance of young men in the ranks and by the exhausting nature of the military work which these young soldiers had to perform.

(6) That notwithstanding the greatest care and precautions for the safeguarding of the generally accepted sources of these diseases, it is practically impossible to completely prevent their occurrence in an army hastily mobilized, operating in a country in which water is scarce, and whose ranks are largely filled with young men at an age notoriously liable to be affected by diseases of this nature.

(7) That in spite of the many difficulties favoring the incidence of enteric fever and dysentery in an army of young soldiers in the field, much can be done to lessen both the incidence and mortality from these affections by suitable and adequate sanitary measures.

Correspondence.

CONCERNING "EXTREMISM."

PHILADELPHIA, Oct. 31, 1903.

MR. EDITOR: In a previous number I had asked you for specific illustrations of what you were pleased to call my "extremism" and "overworked theory." Concerning the courtesy and impolicy of editorial criticism of a contributor's views, that is of course *de gustibus*, and of course, mere general charges, glittering generalities, as regards extremism are reducible to, "You think one way, I another." Referring to definite examples of my "overworked theory" you give:

(1) An implied denial of my accuracy in saying that I have cured thousands of patients of sick headache — on the average $\frac{99}{100}$ of such patients. You cite "the experience of others with migraine." That is not the question at issue. If I have erred in observation and logic, unintentionally, as regards my own cases, it does not prove me wrong to cite vaguely the experience of others. If I have been untrue it would prove me unscientific. My case records, and any number of patients you please, may be inspected. That is the only way to prove me unintentionally wrong. I do not understand you charge me with willful misstatement.

(2) As to refraction by the Germans. Every American oculist who is not doing the same kind of work as they, knows well that what I have stated is absolutely true. This has long ago been thrashed out. The proofs are beyond all question that on the Continent there is no knowledge, desire or ability to do the kind of refraction work that we are doing in this country. All the conditions of success are utterly ignored. I will cite but a few facts:

(*a*) I have had many patients who had consulted the greatest oculists of Europe. Their prescriptions and their glasses were ludicrously wrong — the evidences of mere blunderings and guess-work.

(*b*) In an exhaustive monograph by Möbius on the ill-health of Nietzsche, fresh from the press, there is the evidence that the author and his colleagues know nothing about the existence of astigmatism or of its power to produce even the simplest reflex of headache.

(*c*) The latest edition of the best German work on diseases of the eye — Fuchs — is utterly wanting in its teaching as to all the essentials of accurate diagnosis and treatment of astigmatism and anisometropia, and the American editor felt it necessary to indicate the fact. Following only this great authority the refractive error of a patient could not be rightly diagnosed by the most expert refractionist.

It is not here a question of "fairness;" it is one of truth and accuracy of statement.

(3) Neither do I care for "judicial quality" in the sense charged, for it is to me usually very injudicious. Much of our editorial writing and textbook-making in medicine is thus injudicious — a *dilettante* averaging of conflicting opinions and taking some meaningless compromising, middle course, with no close scrutiny whatever of the facts. How much of our literature is this sort of word-making, opinion-mongering, theorizing, dealing

with ideas, avoiding extremes, — colorless echoings and fused repetitions! The essence of science is correct observation of facts and logical conclusions from them. I repeat that for twenty-eight years there has been no medical blunder and crime against both science and humanity equal to that of the willful ignoring of the rôle of eyestrain by the profession. Concerning the "unprejudiced statements" as to this professional neglect, I am not a defender of such errors because I am a journalist or a member of the erring profession.

Respectfully yours,

GEO. M. GOULD.

SCABIES AND IMPETIGO CONTAGIOSA.

BOSTON, Oct. 30, 1903.

MR. EDITOR: Although communications have from time to time appeared in the JOURNAL calling the attention of general practitioners and those who include the treatment of cutaneous affections in their practice to the modern prevalence of scabies in this community, it would seem probable, from the experience of dermatologists, that a large number of practising physicians, in particular those whose hospital and dispensary work dates back to an earlier period, are still unaware of the present frequency of this affection, especially among the more cleanly classes. That it is not uncommon for this disease to be overlooked in the better classes, and for lack of simple and appropriate treatment to be allowed to continue for an indefinite period, thus affording a chance for its continuous propagation to new subjects, is an undoubted fact. In any affection accompanied by much pruritus, and not exhibiting the type of some other well-defined dermatosis, the *possibility* of scabies should always be entertained, no matter how cleanly and above reproach may be the person and surroundings of the patient. Abundant opportunity for acquiring scabies is offered to those who travel or camp out, and once acquired it may be innocently transmitted to many others. As an illustration of its frequency of late, the following figures are cited, which represent the number of new cases observed during the last month at the Out-Patient Department of the Massachusetts General Hospital.

During the week beginning Sept. 28, 15 cases.
During the week beginning Oct. 5, 13 cases.
During the week beginning Oct. 12, 7 cases.
During the week beginning Oct. 19, 15 cases.

In other words, an average of two new cases a day has been recorded, and in most of these instances a history of a probably similar condition in one or more members of the patient's family has been obtained. And it should be further emphasized that these patients were by no means always of the more uncleanly class; in fact, the average of cleanliness was quite as high as that of the other patients treated at this institution.

Another cutaneous affection that may be referred to in this connection is impetigo contagiosa, meaning by this unfortunately long term the local, superficial, cutaneous abscess caused by the pyogenic micro-organisms. Formerly most of these cases were roughly grouped with the pustular forms of eczema, with which latter affection they are sometimes complicated. Apart from the common form observed in young children, which is usually seen in the form of superficial, as if "stuck on" crusts, common about the mouth, nose and ears, and often associated with pediculi capitis, cases in older children and in adults are frequently seen, of a more discrete rounded type, and sometimes looking at first sight not unlike ringworm. This form is not infrequent on the bearded face, in people whose habits of cleanliness are most scrupulous. Frequently this form appears as an epidemic in workshops, schools and factories. During the past week two such epidemics have been observed, one in the workmen employed in a machine shop and a second in a private school for boys of the first rank. Both scabies and impetigo contagiosa belong to the affections that are, as a rule, easily and quickly cured when recognized, and also to the class of affections that may be widely disseminated if allowed to remain without appropriate treatment.

Very truly yours,

JOHN T. BOWEN, M.D.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, OCT. 24, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York	3,785,156	1,164	373	27.06	12.20	3.35	7.39	1.80
Chicago	1,885,000	442	109	25.11	11.08	4.07	5.66	2.49
Philadelphia	1,378,527	390	97	25.13	7.44	2.56	5.64	1.28
St. Louis	618,481	—	—	—	—	—	—	—
Baltimore	533,712	171	52	30.99	9.36	5.26	7.02	2.34
Cleveland	427,731	—	—	—	—	—	—	—
Buffalo	387,994	—	—	—	—	—	—	—
Pittsburg	351,745	136	—	27.21	11.03	8.82	—	5.88
Cincinnati	335,140	—	—	—	—	—	—	—
Milwaukee	315,307	—	—	—	—	—	—	—
Washington	295,103	—	—	—	—	—	—	—
Providence	191,220	57	14	19.30	3.51	—	1.75	—
Boston	603,163	190	60	22.63	6.84	1.58	5.78	2.11
Worcester	152,044	32	10	9.38	9.38	—	3.13	—
Fall River	115,549	26	14	23.08	7.69	3.85	7.69	—
Lowell	101,959	32	13	15.63	—	—	3.13	—
Cambridge	98,639	25	7	24.00	4.00	—	—	4.00
Lynn	72,497	22	4	4.55	—	4.55	—	—
Lawrence	69,766	21	11	33.33	4.76	—	28.57	—
Springfield	69,389	17	6	35.29	—	—	—	—
Somerville	68,110	11	1	36.36	18.18	9.09	—	9.09
New Bedford	67,198	25	12	32.00	4.00	12.00	—	4.00
Holyoke	49,286	14	7	14.29	—	—	7.15	—
Brockton	44,873	9	—	22.22	—	—	—	—
Haverhill	42,104	8	2	25.00	25.00	12.50	—	—
Newton	37,794	12	2	8.33	16.67	—	—	—
Salem	36,876	12	3	8.33	—	8.33	—	—
Malden	36,286	6	2	33.33	—	16.67	—	—
Chelsea	35,876	13	3	—	15.38	—	—	—
Fitchburg	35,069	8	4	12.50	—	—	—	—
Taunton	33,656	6	3	16.67	—	—	—	—
Everett	33,020	2	—	50.00	—	—	—	—
North Adams	27,862	2	2	50.00	—	—	50.00	—
Gloucester	26,121	4	1	25.00	—	25.00	—	—
Quincy	26,043	—	—	—	—	—	—	—
Waltham	25,198	3	1	33.33	—	—	—	—
Brookline	22,608	—	—	—	—	—	—	—
Pittsfield	22,589	8	4	12.50	—	—	—	—
Chicopee	21,031	1	—	—	—	—	—	—
Medford	20,962	6	3	16.66	16.67	—	—	—
Northampton	19,883	4	—	—	—	—	—	—
Beverly	15,302	—	—	—	—	—	—	—
Clinton	15,161	5	—	—	—	—	—	—
Leominster	14,806	—	—	—	—	—	—	—
Newburyport	14,478	1	—	—	—	—	—	—
Woburn	14,300	—	—	—	—	—	—	—
Hyde Park	14,175	7	2	28.57	—	—	—	—
Adams	13,745	4	—	50.00	—	—	50.00	—
Attleboro	13,677	—	—	—	—	—	—	—
Marlboro	13,609	2	—	50.00	—	—	—	—
Melrose	13,600	4	—	25.00	—	—	—	—
Westfield	13,418	6	2	16.67	—	—	—	—
Milford	13,129	—	—	—	—	—	—	—
Revere	12,722	2	2	—	—	—	—	—
Framingham	12,384	—	—	—	—	—	—	—
Peabody	12,179	—	—	—	—	—	—	—
Gardner	11,928	6	3	33.33	—	16.67	—	—
Weymouth	11,344	3	—	33.33	—	—	—	—
Southbridge	11,268	3	—	66.67	—	—	—	—
Watertown	11,077	3	1	66.67	33.33	—	—	—
Plymouth	10,730	—	—	—	—	—	—	—

Deaths reported, 2,925; under five years of age, 830 (Pittsburgh not reporting); principal infectious diseases (smallpox, measles, scarlet fever, cerebro-spinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 746, acute lung diseases 263, consumption 354, scarlet fever 12, whooping cough 9, cerebro-spinal meningitis 7, smallpox 17, erysipelas 1, puerperal fever 7, measles 9, typhoid fever 57, diarrheal diseases 169, diphtheria and croup 103.

From whooping cough, New York 3, Philadelphia 2, Chicago, Pittsburg, Boston and Gardner 1 each. From erysipelas, New York 1. From smallpox, Pittsburg 9, Philadelphia 8. From measles New York 7, Boston and Providence 1 each. From cerebro-spinal meningitis New York 3, Boston 2, Baltimore and Watertown 1 each. From scarlet fever Chicago 3, New York, Philadelphia and Providence 2 each, Baltimore, Pittsburg and New Bedford 1 each.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Oct. 10, the death-rate was 15.8. Deaths reported, 4,554; acute diseases of the respiratory organs (London) 146, whooping cough 46, diphtheria 45, measles 34, smallpox 5, scarlet fever 42.

The death-rate ranged from 4.7 in Hornsey to 24.0 in Bootle, London 15.8, West Ham 5.7, Brighton 12.1, Portsmouth 19.8, Southampton 13.7, Plymouth 16.8, Bristol 12.0, Birmingham 17.7, Leicester 14.7, Nottingham 16.3, Bolton 18.0, Manchester 19.2, Salford 17.3, Bradford 14.2, Leeds 16.5, Hull 14.8, Newcastle-on-Tyne 21.1, Cardiff 13.0, Rhondda 13.9, Liverpool 19.1, Handsworth 9.1, Middlesbrough, 21.4.

METEOROLOGICAL RECORD.

For the week ending Oct. 24, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A.M.	Relative humidity. 8.00 P.M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A.M.	Direction of wind. 8.00 P.M.	Velocity of wind. 8.00 A.M.	Velocity of wind. 8.00 P.M.	We'th'r * 8.00 A.M.	We'th'r * 8.00 P.M.	Rainfall in inches.
S..18	29.63	55	65	45	82	55	68	W	N W	12	13	O.	C.	.34
M..19	30.06	47	55	39	67	68	68	S	S W	6	9	F.	C.	T.
T..20	29.86	61	70	52	74	65	70	S W	S W	24	5	C.	C.	0
W..21	30.13	51	58	44	58	46	52	N W	N	6	8	F.	C.	0
T..22	30.26	50	61	38	67	75	71	N W	S	2	15	C.	C.	0
F..23	29.94	60	70	50	84	81	83	S	N W	12	11	O.	O.	.20
S..24	30.01	43	50	36	65	54	60	N	N W	12	10	O.	C.	0
☞	29.98		61	43			67							.54

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE TWENTY-ONE DAYS ENDING OCT. 22, 1903.

BAILHACHE, PRESTON H., surgeon. Detailed to represent the service at meeting of the American Public Health Association at Washington, D. C., Oct. 26. Oct. 15, 1903.

CARMICHAEL, D. A., surgeon. Granted leave of absence for thirty days from Oct. 16. Oct. 5, 1903.

KALLOCH, P. C., surgeon. Granted leave of absence for three days. Oct. 5, 1903.

WHITE, J. H., surgeon. To proceed to Gulf Quarantine Station and assume temporary charge. Oct. 8, 1903.

CARRINGTON, P. M., surgeon. Two days' leave of absence from Oct. 15, 1903, under paragraph 189 of the regulations.

MAGRUDER, G. M., surgeon. Granted extention of leave of absence, on account of sickness, for two weeks from Oct. 7. Oct. 13, 1903.

WERTENBAKER, C. P., passed assistant surgeon. To proceed to Beaumont and Houston, Texas, for special temporary duty. Oct. 2, 1903. To proceed to El Paso, Texas, for special temporary duty. Oct. 5, 1903.

PERRY, J. C., passed assistant surgeon. To proceed to Charlestown, W. Va., for special temporary duty. Oct. 12, 1903.

NYDEGGER, J. A., passed assistant surgeon. Bureau letter of Sept. 4, granting Passed Assistant Surgeon Nydegger leave of absence for one month from Sept. 13, 1903, amended so that said leave shall be for one month from Sept. 23. Oct. 10, 1903. Granted leave of absence for ten days, on account of sickness, from Sept. 13. Oct. 13, 1903.

MATHEWSON, H. S., passed assistant surgeon. Department letter of Sept. 23, granting Passed Assistant Surgeon Mathewson leave of absence for forty-five days from Sept. 22, amended so that said leave shall be for forty-five days from Oct. 3. Oct. 7, 1903.

GRUBBS, S. B., passed assistant surgeon. Granted leave of absence for five days. Oct. 8, 1903.

LUMSDEN, L. L., passed assistant surgeon. To proceed to Beaumont, Texas, for special temporary duty. Oct. 2, 1903. To proceed to Eagle Pass, Texas, for special temporary duty. Oct. 5, 1903. To proceed to El Paso, Texas, and assume temporary charge of the station. Oct. 13, 1903.

ANDERSON, J. F., passed assistant surgeon. To proceed to Baltimore, Md., for special temporary duty. Oct. 1, 1903.

FRICKS, L. D., passed assistant surgeon. Granted leave of absence for one month from Nov. 1. Oct. 17, 1903.

RICHARDSON, T. F., assistant surgeon. To proceed to San Antonio, Texas, for special temporary duty. Oct. 21, 1903.

FRANCIS, EDWARD, assistant surgeon. To proceed to the City of Mexico, Mex., for special temporary duty. Oct. 6, 1903.

BAHRENBURG, L. P. H., assistant surgeon. Granted leave of absence for seven days from Oct. 14, 1903, under paragraph 191 of the regulations. Granted extension of leave of absence for seven days from Oct. 22. Oct. 17, 1903.

FORD, C. B., acting assistant surgeon. Granted leave of absence for three days from Oct. 24. Oct. 22, 1903.

JACKSON, J. M., acting assistant surgeon. Granted leave of absence for thirty days from Oct. 5. Oct. 9, 1903.

SIBREE, H. C., acting assistant surgeon. Granted leave of absence for six days from Oct. 6. Oct. 6, 1903.

STANTON, J. G., acting assistant surgeon. Granted leave of absence for thirty days from Oct. 10. Oct. 13, 1903.

BROWN, F. L., pharmacist. To proceed to St. Louis, Mo., and report to medical officer in command for temporary duty. Oct. 10, 1903.

GOODMAN, F. S., pharmacist. To proceed to Laredo, Texas, and report to Surgeon G. M. Guiteras for special temporary duty as special disbursing agent. Oct. 2, 1903.

WOODS, C. H., pharmacist. To rejoin station at Chicago, Ill. Oct. 10, 1903.

MASON, M. R., pharmacist. Relieved from duty at Nome, Alaska, and directed to proceed to San Francisco, Cal., and report to medical officer in command for duty. Oct. 8, 1903.

PROMOTIONS.

G. A. MORRIS, pharmacist of the third class. Promoted to be pharmacist of the second class, effective Sept. 5. Oct. 3, 1903.

CHARLES NAPLES STEGER. Recommissioned as assistant surgeon in the Public Health and Marine Hospital Service to correct original commission, effective Sept. 16. Oct. 12, 1903.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING OCT. 31, 1903.

C. N. FISKE, passed assistant surgeon. Commissioned passed assistant surgeon, with rank of lieutenant, from May 15, 1903.

E. T. MORSE, pharmacist. Detached from Navy Yard, Boston, Mass., and to the Navy Yard, Portsmouth, N. H.

D. N. BERTOLETTE, medical inspector. Detached from duty at Naval Dispensary, Washington, D.C., and to continue other duty.

F. L. PLEADWELL, surgeon. Detached from the "Kearsarge" and to duty at the Naval Dispensary, Washington, D.C.

C. H. T. LOWNDES, surgeon. Detached from Naval Hospital, Boston, Mass., and to the Naval Academy, Annapolis, Md.

J. J. SNYDER, passed assistant surgeon. To the "Kearsarge."

KARL OHNESORG, assistant surgeon. Detached from the Naval Academy and to the Naval Hospital, Boston, Mass.

H. A. DUNN, assistant surgeon. To the Naval Proving Ground, Indian Head, Md.

SOCIETY NOTICES.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS. — The Thirteenth Annual Meeting will be held in the New York Academy of Medicine, Thursday and Friday, Nov. 12 and 13, 1903.

NEW YORK ORTHOPEDIC DISPENSARY AND HOSPITAL. — The trustees of the New York Orthopedic Dispensary and Hospital announce that the surgeon-in-chief, Dr. Russell A. Hibbs, will give a course of clinical lectures on orthopedic surgery at the institution, on Tuesday and Thursday afternoons, at four o'clock, from Nov. 10 to Dec. 15 (both inclusive). The course will be free to the medical profession and students. No lecture will be given Thursday, Nov. 26.

J. ARCHIBALD MURRAY,
Chairman Committee on Clinical Instruction.

NEW YORK STATE CIVIL SERVICE COMMISSION. — Examinations for Superintendent and Resident Physician in the New York State Hospital for the treatment of incipient pulmonary tuberculosis. The State Civil Service Commission will hold open competitive examinations for the above-mentioned positions, Nov. 28, 1903, in various cities throughout the state. Intending competitors must fill out application blanks and file them in the office of the Commission before noon of Nov. 23. Applicants will be duly notified of the time and place of examination. Non-residents of the state will be admitted. For further particulars and application blank, address Chief Examiner,

STATE CIVIL SERVICE COMMISSION,
Oct. 29, 1903. Albany, N. Y.

THE AMERICAN SOCIETY OF CLINICAL SURGERY. — The first meeting of this Society will be held in Baltimore and Philadelphia, Nov. 13 and 14, 1903.

APPOINTMENTS.

DR. WALTER C. HOWE and DR. DAVID D. SCANNELL have been appointed Third Assistant Visiting Surgeons at the Boston City Hospital, dating from August.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Hygene and Sanitation. By Seneca Egbert. A.M., M.D. Third Edition. Enlarged and thoroughly Revised. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1903.

The Proper Perineal Prostatectomy Incision. By Nicholas Senn, M.D., of Chicago, Ill. Reprint. 1903.

Address.

PRESENT PROBLEMS — AN ADDRESS TO THE NURSES OF THE LAKESIDE HOSPITAL.[1]

BY J. G. MUMFORD, M.D., BOSTON,

Assistant Visiting Surgeon, Massachusetts General Hospital.

Good nurses are born for their work.

Poeta nascitur, non fit is as true of you as it is of the lawyers, doctors, ministers and policemen. You can manufacture out of the most unpromising material a good engineer, or carpenter, or sailor, or even janitor; but when it comes to those persons whose work depends on their contact with other people, who deal in personal equations and not in impersonal figures — then there enters into the problem a new and wonderful group of elements which are a part of the birthright of some, while the others without them stagger through life, blind, puzzled, indignant with the fates: tact, humanness, womanliness, manliness, the appreciation of proportion, the attribute of "sweet reasonableness," the rare sense of humor. And of course you are to take this reflection as meaning that some of us are better workmen than are others. To him that hath, is as true as ever it was, but we should have to despair indeed if we were to believe that from him that hath not shall be taken away even that which he hath.

You trained nurses have had your place in the world's work now for more than a generation, and it seems to me it is time to look about occasionally and ask what you have made of yourselves.

I have heard and read many addresses given to nurses on such occasions as this, and in the main the speakers have devoted themselves to two topics — your usefulness and your education. Nurses have been told a thousand times that theirs is the noblest of professions; that nursing is woman's true sphere. Poets have been invoked to demonstrate that by day you comfort the sick, by night you soothe the dying. *Weeping willows* have been made to rhyme with *lonesome pillows*, and the rest of it.

It's all true enough. No one appreciates it all more than I do. It *is* a noble profession, and the good you do is beyond measure.

Then there is that other subject — your education. That is a great subject. You have begun it well here in this training school, but the most important part is to come, and I want to talk with you in some fashion about that.

At the outset of your work in life after leaving the training school, you are in a position quite different from that of any other professional people known to me; you are equipped for practice and you assume at once the full standing of the experienced workman. You are deemed — for so tradition has arranged it for you — as competent as the women who have grown gray in harness. You expect as a right the maximum wage, — twenty-one or twenty-five dollars a week, or whatever the sum may be in your particular locality, — and as a general thing you get no less. Did it ever occur to you what that state of affairs may mean? Try to apply the same principle to other professions or trades, if such a conception is possible. What would you say if you had to pay a young journeyman plumber or carpenter the same wages that you pay the master craftsman? How readily would you call in the youthful doctor or lawyer if his fees were those of the eminent specialist or jurist? The thought is inconceivable. But you will say there is no parallel in the two cases; the young nurse is equipped for her work as well or better than the old one. The nurse fresh from the hospital is likely to be better than the nurse grown stale. She is familiar with the latest methods; she knows the new drugs and the new instruments; she has served only with physicians who are leaders in their several departments; she is keener, more alert, more interested. All that is so true that it seems unanswerable, but if followed to its logical conclusion it means this — that the younger the nurse, the better the nurse; the older the nurse, the worse the nurse. Is that a pleasant prospect? Is that creditable to a noble profession? The youngest nurse is best for the community, if you choose to put it so, but is that a condition best for the nurse herself? I have had old nurses — women with fifteen or twenty years' experience — come to me complaining bitterly that their practice was leaving them, that their old patients never sent for them, that the doctors no longer employed them. We have in Boston an institution called "A Home for Aged Women," part of the income of which is specifically devoted to helping women who have grown old in the care of the sick. That fund is called the Doane Fund, and I assure you the beneficiaries under the Doane Fund are but a fraction of those needy ones who clamor for relief.

All this is a very serious business; it is not a cheerful topic to air before you as you start generously forth on your life work, yet it is a very significant fact, and it must give pause to those of you who are wont seriously to consider the life problem.

When the trained nurse became an accepted fact twenty-five or thirty years ago, she was looked upon as an exponent of our modern altruism — as a secular sister of charity, so to say; but she was not taken seriously as a professional woman. Of course she had to live and she had to be paid. Nurses are few in number, and they were greatly needed. The cost of a nurse was fixed high, for it was a matter of supply and demand; but a nurse was a nurse, the laborer was thought worthy of his hire, and so from the outset the pay was good while work was to be had. But there was no progress for the individual.

There was no progress. It was there, and it is there that the fatal weakness in the nurse's profession inheres. Of what other toilers in this busy world can the same be said? The chore boy can rise to be head waiter; the unskilled

[1] Cleveland, Ohio, May 25, 1903.

laborer can rise to be boss of the gang; the apprentice may become a foreman; the office boy may become a judge of the Supreme Court; the house officer may become a great surgeon. That is what life means to most of us. Work; steady unceasing, increasing work; with widening opportunities, with proportionate returns, with an honorable goal. Those are some of the things that make life worth the living; and with them go other things which to some count for more even than material success — increased occasions for usefulness, a broadening horizon, a closer and more generous contact with our kind, a full career, and at the end the unspeakable satisfaction that we have not lived in vain.

I fear we are all of us very weak human beings. Few of us were born to be great, but that is no reason for curtailing our chances, and as yet it seems that the chances of nurses are not what they might be made.

My predecessors in this office have said some very stirring words about what nurses are and what they are to be — words very stimulating and instructive. Those gentlemen have told how your education is to be broadened and how your place among the world's workers is to be made more honorable and more secure; but I cannot help feeling that those happy prophecies of theirs were addressed more to the nurses of the future than to you who here and now are taking up the task of caring for the sick.

I wish I had some ready, practical solution for the problem which I have suggested; some method by which you could become stronger and wiser, more learned, more skillful and more in demand individually as the years pass; but the problem is one which cannot be answered offhand. It is one which you yourselves must solve, painfully, laboriously, by the slow process of evolution. I have some thoughts, however, which you may take for what they are worth — old thoughts many of them, futile perhaps in some sort, but occurring not infrequently to those of us who have your welfare at heart.

In the first place let me tell you that unless your circumstances and training are very different from those of most of the nurses known to me, it is a mistake to start in as specialists. Such specializing may come later as your careers develop, but at the outset take everything that comes to you unless you feel yourselves unqualified. Don't pose as surgical nurses or medical nurses or obstetrical nurses, and, above all, don't refuse to nurse men. For a good while yet you will need all the experience you can get, and you can get it only in general nursing. Don't tie yourselves to one doctor. He may fail you, for he too is but mortal, and nurses can quickly be lost to view and hopelessly sidetracked.

Don't refuse poor cases. I wish some fashion might be devised by which the poor could be effectively cared for in their homes. By the poor I do not mean the starving and the destitute. They are looked after by the hospitals and the district nursing associations, but I mean the families of men on small salaries. If the father earns forty or fifty or even one hundred dollars a month, he cannot well pay out twenty-one dollars a week for a nurse in addition to all the other heavy expenses which illness entails.

Such people get often the best of *medical* care, because competent young doctors will treat them for the sake of practice and old doctors from a high sense of the sacred obligation that rests upon their calling.

Don't mistake me! I am perfectly well aware that nurses do take poor patients, but I think if you consult some of your older sisters and listen to some of their talk you will find that they often look upon such service as a hardship and feel that the good-natured charitable ones are imposed upon and even lose caste.

Remember that what I am saying is suggestive merely and is crudely sketched; but would it not be possible to establish traditions in your profession similar to the traditions of physicians — that in some fashion no call for help should be refused? You are banding yourselves together into clubs and associations, and such banding is distinctly for your best interests as well as for the best interests of the community. In some way which should not interfere with the liberty of the individual would it not be possible for such associations to see to it that its younger members, without serious pecuniary loss, might give a portion of their time to the poor, and that the doctor, when asking for such help, might not have to approach you with an apology? To such suggestions as this, nurses have replied to me: "Very true, some nurses do take cases for small fees, but they soon come to be known as cheap nurses and lose their chances for the paying cases." Truly that is a lamentable fact and a lamentable tale. It does not count for better things that such is the case, and it rests with you in your organizations and in your public spirit to see to it that such things cease to be.

There is our first thought: that poorly paid, little regarded work be done, that thus the field for the work of all be widened and that out of such small beginnings great reputations may be made. For mark me, this thing that I tell you is true: a professional reputation, whether of lawyer, doctor or nurse, must rest on foundations broader than the flatterings and praises of a few wealthy clients or patients. Such thin reputations are erected in years and are shattered in days. None of us is safe who depends for work on the fickle fancies of the few. Gain the confidence of the whole community, of the poor and the rich, of the little doctors and the great ones — then you may rely upon an assured future.

You will tell me that this may all be true, but that it does not meet my earlier query: Is the young nurse the better nurse, the old nurse the worse nurse? There indeed is another problem. So far as "up-to-dateness" goes, perhaps in a superficial sense the young nurse may be the better; but the fault will be your own if that remains true in the future. Remember that I am speaking now of the great majority of your number — of those who go out into private prac-

tice. You must not allow yourselves to grow rusty and inefficient. Already in your school you have been taught to study and to use your minds and to do your own thinking. That is the best thing you have learned here. Having learned that, you must apply it ceaselessly. I need not insult your intelligence by telling you to keep up your reading. You must do more than that; you must continually cultivate the habit of observing, deducing and recording — those three attributes of the trained mind. The ward and the sick-room are your laboratories, and with due regard to the humanities you must take advantage of that fact.

Lately at the Massachusetts General Hospital, and at some other hospitals I believe, we have established ward courses for graduates. As yet those courses have attracted all too little attention; but nurses are beginning to appreciate their value, and before long I hope to see alumnæ returning in increasing numbers for such work.

As you progress, too, you will find, or you will make, various opportunities for reviewing and for supplementing your present knowledge. You will gravitate towards special lines of work in which you will be regarded as expert. For many of you whose temperaments so lead you, an occasional course in some hospital or other institution will appeal, and you will find such experience of advantage. I am not referring to those who propose devoting their lives to institution work, but to the private practitioners among you. A summer spent every few years as operating assistant or substitute head ward-nurse will keep you in touch with the new things, for, indeed, new things come slowly in the active lives of most of us.

But, after all, the best and most important thing will be constant serious coöperation among yourselves for the betterment of your profession, and that coöperation, to accomplish its purpose, must be along democratic lines. It is all very well to have small clubs and cliques for social purposes and for special work, but when it comes to those organizations which really strengthen your profession and deepen its foundations you cannot afford to depart far from the democratic idea. This I say from a considerable knowledge of how similar problems have been met and solved in my own profession. There is a democracy of science, and in a true sense you nurses are workers in the scientific field.

Last year Dr. Osler gave a delightful address to the Canadian doctors on what he called "Chauvinism in Medicine." He pointed out how we all, regularly educated and licensed practitioners, belong to one great family; how there are no school, city, state or national boundary lines among those whose pursuit is the truth; how jealousy and local conceit and the decrying of those whose work lies without our little circle lead to narrowness, to self-stultifying and to the destruction of that very edifice of science which the best among us are faithfully and laboriously building. The address was a fine plea for the brotherhood of science and of man; a plea which nurses as well as doctors might well listen to and heed. It is by a banding together of all the efficient in one great sisterhood that you can raise your profession to the stability of those other professions with which you must come to be ranked. I beg of you to note that word *efficient*. I am not asking you to open your ranks to the incompetent, the unscrupulous, the impudent, the charlatans untrained. You must steadfastly refuse them your countenance as you are doing; but you must recognize the efficient among yourselves — those who have proved their worth by years of work and the winning of recognized diplomas, no matter whence they come or what their school. If you do not do this, if you do not so strengthen your own hands, you will continue to invite the competition of the pretenders, and you will be emulating the example of some of the labor unions, which destroy their own ends by encouraging a fatuous mediocrity.

I could specify easily examples of what I mean, and tell of certain groups of nurses, graduates of certain hospitals, who persistently look down with a silly and irritating jealousy upon those outside of their own little circle. Perhaps such conditions do not exist in this part of the world. I certainly hope they do not, but let the warning stand, nevertheless.

It will not be long, I believe, before a recognized and legalized sharp line of cleavage will be drawn between trained or registered nurses on the one hand and the masses of the untrained on the other. In the bill providing for the examination and registration of trained nurses, which is before the New York Assembly, Miss Palmer pointed out that in that state there were *twenty-five hundred trained* nurses and *fifteen thousand* untrained nurses. The bill is being introduced through the agency of the New York State Nurses' Association, and will prove a great step in advance. The other day in Massachusetts a similar organization was formed by some three hundred and fifty nurses, assembled in Faneuil Hall for that purpose. Many hospitals and schools throughout the state were represented. The same work is going on in other states. It is a very real and important work, I believe; and I do sincerely trust it will lay the foundation for that catholicity of purpose, that broadening of horizon, that capacity for true progress, which must attach to every vocation that is to succeed.

There is another aspect of the nurse's problem which will be more immediately obvious to most of you than are any of those questions which I have raised; I mean the attitude towards you of the public and especially of individuals among your patients. The public has long since come to recognize vaguely your value and to turn to you for help, and the public approves of the trained nurse as an institution. But there are many dull and wrong-headed people who persistently think ill and speak ill of the nurse as an individual. This sentiment rises usually, you will find, from some unfortunate or unpleasant

experience with some special nurse. You will hear a foolish person say, "I don't believe in trained nurses," and he will say it to you with a smirk of self-approval. But you will just as often hear the same individual remark that he does not believe in doctors. When that sentiment has been addressed to me I have always felt soothed and stimulated, glad that the world has produced one more person of tact and sensibility.

There is, however, a very considerable number of reflective men and women who will tell you that they do not regard nurses as professional persons very seriously. Their reasons are in part those I have already suggested in this address; but these critics feel, in addition, that most nurses in the very nature of their circumstances, from the fact that they are young, single women, do not look forward to nursing as their life work. It is said that they take up nursing from a great variety of inadequate reasons — to kill time, to find new sensations, to make a little money, to become independent and the like; but, that as a matter of fact, they do not intend to remain nurses; that they expect a more secure settlement and to become wives and home-makers like the rest of their sex. In all candor, we must admit that there is a great deal of truth in this, for such is the state of mind of many nurses. If the anticipated events occur, the nursing lives of many nurses are to be short ones. Now, as a matter of fact, the average nursing life is about ten years, and is not ten years of professional life something seriously to be regarded? The lawyer and the doctor have average professional lives of about twenty years; twice as long as the nurse's, but sooner or later the lawyer and the doctor leave the stage — they die, they grow old, they retire. Of what consequence is the reason? Where then are to we distinguish? The doctor dies, the nurse marries,, if you choose. Is the career of the doctor, which lasts twenty years, to be applauded, and the career of the nurse, with her ten years, to be dismissed with flippant words?

But there are other more immediately obvious hardships than this skeptical estimate in store for you — so you will be told with much truth. The great and standing grievance which very many nurses come to cherish against their patients and their patients' friends is a lack of consideration. Many persons employ a nurse not for her knowledge, experience and skill,— those things they are apt to question,— but in order to spare themselves. To them a trained nurse is a human machine to be secured, wound and ready to go indefinitely. Such persons will not spare *you*. They will keep you busy day and night. It is such treatment, which I regret to say is all too common, that helps to breed in nurses a sense of antagonism, a certain hardness, and brings about that state of mind which thinks of and refers to patients as *cases* and not as afflicted human beings. Perhaps, too, the doctors are in a measure responsible for this attitude of nurses, because, as your training in the hospitals shows you, the doctors, with their press of work, unavoidably regard their ward patients as cases and as material. Of course that is a mental attitude deplorable alike for doctors and nurses. The doctors with their wider experience and more diversified lives, are able mostly to subdue the tendency at will. For you it may be somewhat more difficult, but it is a task to be done.

Another remedy for this tendency, perhaps the most important remedy for you as your lives develop, is to seek the special line of work that you do best. At present there are three broad classes among nurses, each class having its subdivisions. The three classes are: private nurses, institution nurses and district nurses. Their three lines of work are quite distinct, each having its particular interests, suited to different temperaments. I think I should choose to be a district nurse if I were a nurse. The private nurse earns more money, the institution nurse sees a greater variety of practice and has regular hours, the district nurse has greater independence and comes into the closest contact with humanity. So let each one choose.

Such very briefly are some of the problems which must be met and solved by nurses and nurses' associations. I fear I may not have told you very much that is going to be of immediate practical value, but how is that to be done in a fifteen-minutes talk at the end of a three years' course?

The question is often asked, What is the one thing most essential for a nurse's success? The answers are as various as the questioners, — good health, yes, that is essential; cleverness — you can get on without too much of that; good temper, tact, courtesy, gentleness, courage, interest, fidelity, unselfishness — all those are fine, useful traits; if you have them not, perhaps you can cultivate them. Sometimes I have thought that the attitude of the sister of charity is the best thing a nurse can attain, that self-effacement, that thought only for the patient which those good women are supposed to have. To this some nurse will answer: Yes, but we are taught to consider the doctor first and the patient second.

Truly, it is a thorny path, to be sought and followed by each individual according to her best lights and endeavors, and when you argue it all out to the last analysis, why is it not true that the great essential for success in nursing is the same as for success in the other walks of life? Saneness, a sound philosophy, a clear-eyed outlook on the world as it is — there is nothing new in that thought. Socrates, Epictetus, St. Paul and Marcus Aurelius held this view.

While you work preserve your health; find recreation, physical and mental. Don't forget how to play, but play in season. If the patient overworks you, tell the doctor you need help. Get an hour or two of exercise in the fresh air every day; get six to eight hours of sleep out of the twenty-four; eat three regular meals and eat them slowly. Faithfully keep up the routine of cold bathing as you do the wearing of fresh linen. Keep your mind alert and interested;

know things outside of your profession; cultivate a hobby. That eminent lawyer and writer John C. Ropes once told me that it was necessary for every successful professional man to have some constant outside pursuit. His own hobby was Napoleon and matters pertaining to military history. During his later years I suppose he knew more about Napoleon than did any other living man. His hobby kept him fresh, eager, interested and supremely interesting. You women can have your hobbies, whether you take to Napoleana, or the D. A. R., to botany, painting, embroidery, stamp-collecting, astronomy or wood carving. All such things are honest, instructive, wholesome, and they count for good.

And mark you this, that as you broaden yourselves you acquire more of that true sense of humor which is a large part of the philosophy of life. As the years pass, it makes that life more abundantly worth the living, "for truly, this humor is an adjunct divine, and as far beyond the trivial word for it as 'love' is or 'charity.' No definition or happy phrase sums it correctly or rates it high enough. It is a balm of life. It makes for greater things than clean laughter from the lungs. It is the root of tolerance, the prop of patience. It suffers long and is kind; serves to tune each little life-harmony with the world harmony about it, keeps the heart of man sweet, his soul modest, and at the end when the light thickens and the mesh grows tight, humor can share the suffering vigils of the sleepless, can soften pain, can brighten the ashy road to death." [2]

This is not a sermon. It is not even a lecture, but a plain talk by a working man to working women, and remember, as the Cambridge poet said two hundred years ago,

"A woman's work, grave sirs, is never done." [3]

Original Articles.

STOMACHAL AND INTESTINAL DERANGEMENTS AND AFFECTIONS OF THE FAUCES, PHARYNX AND AIR PASSAGES.

BY BEVERLEY ROBINSON, M.D., NEW YORK.

One reason why the older practitioner of medicine is less enthusiastic about new findings is doubtless to be explained by the fact he has noted many times, *i. e.*, that the current of medical thought and action revolves, as it were, in a circle. Given a certain period of time, more or less, and the opinions and treatment of physicians which had become banished almost completely for a while return and become again the rule of thought and action. It may be, and in this wisdom has taught the lesson which is born of ripe experience, that convictions and measures which had been pushed to their uttermost are once more received and followed, but in a far more rational and conservative manner.

I shall only cite a few examples familiar to all to prove my statement. Take bleeding in pneumonia, for example, and mark the generally received judgment in former years — on the one hand, a local inflammation of the lung and on the other the curative effect of excessive depletion. Take calomel — in massive doses, repeated more than once, it might be, to jugulate an incipient inflammatory process of the pleura. Take opium — the panacea of peritonitis (so called) in its acute form when declared, and repeated frequently until both pulse and respiration were reduced very markedly in frequency or affected sensibly as to rhythm or volume. These ideas, this treatment, based probably upon erroneous convictions to a certain degree, were without question, according to actual knowledge, excessive, and hence often resulted in direct injury to patients. At times, however, benefits great and evident followed, and many notable and direct cures were surely established. To-day mercury, opium, bleeding, are employed more judiciously, as our knowledge of morbid processes has advanced, or at all events changed. We may fairly add, I believe, that just as formerly our notions about certain things were excessive, at present, perhaps, they are somewhat too conservative, and only later we shall know when and to what extent to make use of these and other very valuable remedies in the best way. And we shall also modify our present convictions about many diseases, and thereby, perhaps, approximate greater truth.

Not very long ago, and in my own experience, those who recognized a very manifest correlation or dependence between gastro-intestinal troubles and those of the respiratory organs were regarded by many, especially prominent specialists in laryngology, as being behind the times, prosaically so, and as requiring new lights and fresh guidance. They argued with the German school of the day that local treatment, medical or surgical, was the main essential object to keep constantly in view, and a great deal of the talk or doing about dyscrasia, constitutional defects, the influence of climate, of season, of habits, of occupation, etc., was drifting far away from the best that could be accomplished in actual practice. And thus sprays to the nose and throat, inhalations of divers sorts, local applications with brush or sponge to diseased parts, cauterizations, burnings with electro-cautery, the use of trephine and saw, knife and chisel, were the order of the day.

To talk of Epsom salts, nitre, aconite, blue mass, spirits of mindererus, cubebs, etc., was to raise an incredulous sceptical smile, and to court more or less immediate and forcibly expressed opposition. And yet look how the pendulum swings! how we are returning once more to time-honored methods which have disappeared for a period, only to return with renewed and accentuated truth and power. This belief has been forced upon me again, I am glad to say, by more than one paper I have read or listened to within the last few years. It has been rendered doubly

[2] Eden Phillpotts, in "Sons of the Morning," p. 479.
[3] Mr. Eusden, at the Cambridge Commencement, 1714.

true by the tenor of more than one debate, and the remarks of more than one able and expert speaker.

Having introduced my subject, I shall in a brief way refer to several instances in my own experience, to corroborate my statements and further, if possible, to carry conviction to some wavering minds which need yet to be instructed, as I believe, and thus to acquire correct appreciations of what to me and others seem almost obvious facts. Of course I do not wish to be understood as telling what is new; I know indeed a great deal is threshing again old straw, but this is a good, almost essential work for some one, especially when the younger men in the profession seem ignorant, practically of what has been known, considered and has guided many in the counsel towards and care of patients. The importance of the recognition of the facts referred to is to me unquestionable. And this is a truth both in acute and chronic diseases of the digestive organs as causing morbid determinations in the air passages. In a similar way the latter affections are occasionally causative in producing both acute and chronic digestive derangements. Such effects are, however, much less frequent. In such instances the nature of the disorder may be nervous in origin. Again there are a few clear instances of chronic inflammation of the stomach and bowels which are of catarrhal nature.

It has been taught and understood pretty generally in the past few years that chemical analyses of stomachal contents after a test meal were very important from the point of view of diagnosis and also of treatment. So far as curative interference with patients is concerned, I must take exception to this statement as being always true clinically. From a scientific point of view, I do not question the value of every accurate acquisition of facts. But when from facts we adopt theories, which, although true many times, are not invariably so, but have numerous exceptions, we are liable to be led astray ourselves, and to mislead others. I have noted occasionally that the very diet and drugs which from any rational standpoint we could discover were least well adapted to a given patient were just the ones most useful or effective. Not infrequently the discovery of this fact has been the result, not of study, or previously acquired knowledge, but of the merest chance apparently. Again, I have remarked, as we all have, that whenever a patient has a great and persistent longing for a particular food, or drink, it is unwise always to deny them the satisfaction of eating or drinking as they would, on the ground that the craving was irrational and that the patients would surely suffer from wrong indulgence. Time and again by permission accorded to the patient to partake of what he or she desired the experience has proven very beneficial, and that too, not only for a short time, but also during a period more or less lasting. On the other hand, I would not deny that now and then this yielding to the importunity of a patient about food, or drink, has seemed like weakness on our part, and as being opposed to our sober, better judgment, and subsequently, when bad consequences were observed, we have reproached ourselves bitterly for having done an absolute wrong and having been inimical to our patient's progressive improvement. How to avoid just such instances, how to give information which in advance will guide us to right conduct unerringly, we do not know at present. Later, perhaps, the unfortunate exceptions will be explained on rational grounds, and with improved knowledge. Until then we must simply watch and wait.

It is a trite statement to make when we affirm to-day the great utility of the laryngoscope and rhinoscope to general medicine; and because the overzealous or narrow minded and ignorant have been led away by its frequent and great usefulness to see things and to perform operations which their blinded vision mistakes and their deft hands had better have let absolutely alone, is not reason enough to ignore just claims or to fail to recognize facts and observations only possible through the employment of special instruments. One can see and note the very rapid effects produced on the nasal, pharyngeal and laryngeal mucous membrane of a dietary indiscretion and of its resulting digestive upset. And this is surely more satisfactory in every way than merely to make guesswork of it. The pituitary membrane becomes engorged, irritable looking, more vascular; the larynx becomes congested and infiltrated. Frequent sneezing, nasal obstruction, hawking, secretion of mucus; or cough, expectoration, wheezing, mucous râles, dyspnea, may be observed rapidly to occur. And with the occasional, frequent or habitual recurrence of the cause of these sequelæ their presence will be remarked more or less continuously. Acute coryza is ordinarily attributed to the effects of cold, of sitting in a draft, wet feet. It is also due to a contagion transported directly from another similarly affected. Dust laden atmosphere or close, confined, badly ventilated, overcrowded rooms may cause it; so too it may be the expression of an overloaded system, or indeed of a manifest gouty state. Finally, however, I believe a disordered stomach or bowels is not infrequently causative, and it is only by attention to these derangements, either by diet or suitable medication, or both combined, we may combat it in the best, shortest manner. I admit that to make the differential diagnosis of these cases is very difficult at times, and I am inclined to believe it is made sometimes therapeutically by observing how ineffective usual remedies, local or general, are.

What is true of simple coryza is also true of acute catarrh of the naso-pharynx and of superficial acute tonsilitis of the simple variety. It is no unusual observation to make that within an hour or two after a meal too abundant or rich, or after partaking of a particular food or drink that occasions stomachal distress or malaise of one sort or another, repeated hawking and spitting of frothy or gelatinous-looking mucus

from the throat and naso-pharynx occur. If the throat is examined at the time, the tonsils, pillars of the fauces and pharynx are partly covered with secretions of this nature. If the disturbance has been recurrent the uvula is relaxed, pale, elongated, glistening and somewhat edematous looking. Where the tonsils are inflamed superficially, there is some swelling and redness locally, with stiffness of the neck, or some soreness or difficulty in swallowing. The follicular tonsilitis of children usually, and the same disease in adults, which relatively is infrequent, seems often to follow excessive indulgence in rich or sweet foods (pastry, cake, candy, etc.). There may be, and no doubt is, at times a complicating dyscrasia, rheumatic or gouty perhaps, or an infection which localizes itself here, the nature of which is far from being accurately determined always, yet it is surely correct to assume or believe that the dyscrasia, or infection, would not become evident unless the imprudence or wrong doing had occurred. The fact that the white deposits over the mouths of the tonsillar follicles are not seen always immediately, and that twenty-four or forty-eight hours may elapse before they appear, is not sufficient reason to make me change my belief about the nature or manner of their growth. Even presuming the deposit on the tonsils be of microbic origin, it would not find a favorable site for its development unless the mucous membrane were morbidly changed so as to favor it. Of course there are grades, differences of this disease termed follicular tonsilitis. In some instances the general disturbance of the system is of such a nature that I am satisfied as to its infective character. Not only is there much depression, fever and great weakness during the immediate attack, but subsequently, for many days, and after all signs of local disturbance have entirely disappeared, the patient is visibly in a weakened state that shows itself by pallor, inappetence, weak, rapid pulse and marked prostration of bodily energy.

The dividing line between some such cases and diphtheria is far from easy to determine. Clinically almost all the symptoms of diphtheria may be defined, barring the bacterial finding of the real Löffler bacillus, and we may have just as much, nay, even more, cause for anxiety about the patient than if the diphtheria bacillus had been found. In just such a case I have known antitoxin to prove almost immediately and wonderfully remedial when other means had signally failed and the patient's condition was very serious, indeed imminent. It is not uncommon to encounter asthmatic seizures which are evidently due to an attack of acute indigestion. A too abundant meal late in the day will frequently be followed by a wakeful, distressing night, and very great dyspnea, with loud, sonorous rhonchus stamp the attack. These attacks may also be occasioned by what appears perfectly simple food, and yet which from one cause or another disagrees. In a young child, many years ago, I saw an instance where a tumbler of milk taken at bed-time would bring on an attack of asthma soon after the little one had been asleep. With the attack of asthma there was a severe eruption of urticaria. If this child ate a slice of bread with the glass of milk, the asthma did not occur, showing the effect of the cereal doubtless in breaking up the curd and making it more digestible. The most efficacious and quickly acting remedy was found to be frequently repeated doses of lime water, neutralizing in this way, as I believe, the organic acids formed in excess. While this "peptic asthma" is a well-defined entity and generally described, it is not taught that nervous dyspepsia is at least an accompaniment occasionally of asthma, and may be to a certain degree caused or aggravated by the latter. Such cases are unusual and not readily determined. Instead of causing stomachal intolerance or an attack of diarrhea, I have known eating fresh mushrooms to occasion very pronounced edema of the uvula, so much so indeed as to cause very distressing symptoms of choking. I have not known such an attack to be caused by canned mushrooms. Although the apparent symptoms of gastro-intestinal indigestion may not be discovered, I feel confident that a closer scrutiny would reveal them. The treatment of such a case resides in the immediate application repeatedly of burnt alum to the uvula and a cathartic dose of mineral water or salts. The cause of the throat irritation proceeds in many instances from direct contact with the acid renvois which come from the stomach. At the same time, the ptomaines generated in the stomach or bowels cause a general poisoning of the economy through the blood after absorption from the peptic or intestinal glands.

One important fact is undoubted at times, *i. e.*, that we find the same micro-organisms in the throat and in the stomach. As to whether they were swallowed, and their presence thus explained in the stomachal contents, or they were originally developed in the stomach and brought into the throat by regurgitation, is not settled. The relations of chronic disorder of stomach and bowels to nasal and naso-pharyngeal catarrh were first insisted upon in this country by Wm. H. Daly as far back as 1882. In the former, Daly saw the cause of many catarrhal conditions of these passages. Where it was not evident that the digestive disturbances preceded those of the respiratory tract, they always aggravated them when present. And if through judicious dietary and treatment we got the stomach and bowels in good working order, we found that frequently there was no occasion to make local applications to the throat or nose, or to do many operations for the relief of hypertrophic rhinitis or for obstructive disease in this organ (the nose), of divers sorts. On the other hand, chronic naso-pharyngeal catarrh may become the "fonsetorigo" of digestive troubles, mainly through repeated dropping of unhealthy secretions from the throat and subsequent swallowing them. In these instances there is no doubt in my mind that moderate and sensible local treatment of the nose and throat is much to be followed and praised.

Indeed, unless we free up nasal or throat obstructions in many such instances through proper septal operations, or the removal of adenoids, or enlarged, chronically diseased tonsils, we shall fail signally to benefit or relieve the consequent digestive disorders. The two conditions of inflamed throat and chronic dyspepsia may march together, and as one organ or condition improves so will the other. If, likewise, one organ grows worse, so will the other. It is, however, difficult or impossible invariably to discover through symptoms and the patient's history in which organ the trouble started. Therapeutically we must make use of our brains first of all and act intelligently according to the case we have in hand. If there be evident faulty conditions in the nose or naso-pharynx, these should often be corrected as far as may be by local applications or operatory procedures. At the same time, the habits should be regulated and the diet made simple, nutritious and moderate.

Nervous, run-down women of middle age, who suffer also from menstrual difficulty, are apt to have atrophic nasal catarrh. A wisely adopted rest cure and the continuous use of the glycerophosphates of lime and soda will prove helpful. To club men who are bloated, red, corpulent, and also suffer from a thickened engorged mucous lining of nose and throat, low diet, abandoning the use of alcohol and free diuresis through Poland water or Celestins Vichy, will prove useful. The presence of incipient or more advanced cirrhosis of liver and veinous engorgement of the entire upper air tract among these men is also what we encounter time and again. It is clear from the foregoing how essential it is for throat specialism which is broad, conscientious and useful to be guided and directed many times by a knowledge of general medicine. This statement does not prevent my recognition of the great advantages derived directly many times from the rhinoscope and laryngoscope in skilled hands. It is against their abuse that I and others cry a halt.

ROUTINE TREATMENT IN A GENITO-URINARY CLINIC; FUNCTIONS OF SUCH A CLINIC.

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THE study of records which forms the basis of this paper was undertaken for the writers' private information, with the added hope that we might extract something that would help in treatment. In the end, however, it is published, not because anything of especial technical value has been found, but because the study has raised broader questions as to the functions and use of a clinic of this class which seem worth discussing.

The paper is, therefore, presented in two parts, on the one hand the technical data, on the other the discussion of these broader problems.

PART I.

In the mere impressions left with us by routine medical work there is always a large element of error. To check this in regard to this particular clinic the writers have looked up the records of part of their last service, covering August and September, 1902, in the Genito-Urinary Department of the Boston Dispensary.

This clinic is a large one and seems to enjoy the confidence of the afflicted throughout and beyond the South End. The year's average of new cases is, roughly, 2,000. The daily total of all old and new cases varies from 15 to 50. For this paper 328 case records were worked over.

The diagnoses recorded were as follows:

Chancres or early syphilis	13
Chancroids	27
(with bubo)	2
Bubo (alone)	1
Acute gonorrhea	130
Chronic gonorrhea, anterior	48
Chronic gonorrhea, anterior and posterior	26
Chronic prostate and vesicular disease	11
Follicular or periurethral infection	3
Epididymitis (alone or without urethral dis'ge)	4
Gonorrheal rheumatism	2
Stricture	13
Balanitis	5
Venereal warts	6
Torn frenum	1
Non-Venereal.	
Hydrocele	6
Varicocele	2
Senile prostate	7
Retention from spasm	1
Irritable prostate	2
Impotence	1
Neurasthenia (sexual)	7
Hematuria	1
Paraphimosis	1
Edema of prepuce (no known cause)	1
Induration of corpora cavernosa	1
Eczema of scrotum	2
Scabies	1
Pediculi pubis	1
Genito-urinary tuberculosis	2

The relatively small number of syphilitics is in part explained by the fact that all definitely diagnosed syphilis at the dispensary is referred to the Skin Room.

TREATMENT.

Chancres were treated expectantly with washes and powders until such time as the diagnosis could be confirmed — then transferred.

Chancroids were usually disinfected so far as possible by the use of strong carbolic acid, followed by alcohol. With this (and sometimes as sole treatment) frequent cleansing at home with creolin or other washes, and the application of boric acid or other non-cohering powder, formed the routine. In the period covered there chanced to be no circumcisions for chancroids — splitting up the dorsum for chancroids with phimosis was done in one case only.

Buboes were always treated by simple drainage without very free opening or dissection. Abortive treatment was not tried, as we had only broken-down and "ripe" buboes to treat, and

were fortunate enough to have none form from chancroids under treatment.

Gonorrhea in hyperacute cases was treated in the beginning with internal medication, — copaiba or santal with diuretics and alkalines, — under the usual rules of relative rest and hygiene. In all other acute cases where it was possible, copious and frequent irrigations, with hot permanganate solutions or with weak silver nitrate or weak corrosive solutions, were used. In selected cases, especially when seen early in their course, definite attempt at bactericidal treatment was added to the above routine.

In cases with a developed acute posterior urethritis, the general trend of treatment was conservative. Treatment of the anterior disease was continued, and every two or three days in quieter cases a posterior (Diday) irrigation added.

In the later stage of anterior disease astringent injections, medications through the endoscope and mechanical dilation (Kollmann dilators usually) were the means most used.

Late stages of posterior infection were combatted with strong instillations with the Ultzmann deep syringe, and prostatic massage was occasionally used.

Home treatment with injections was not advised or prescribed in any stage f the disease.

As to the comolications. No cases of suppurative prostatitis were met in this service. There were but three cases of follicular or periurethral abscess — one lost track of, two sent to hospitals for operation. There were but two cases of true cystitis secondary to gonorrhea — both were treated with bladder irrigations.

Epididymitis was treated by suspensory, relative rest and hot fomentations or poultices in the acute stage; later with suspensory and with nitrate paintings, or, more often, ointment of mercury and belladonna.

Of the late sequelæ the *chronic prostatic* conditions (including many of those often classed as vesiculitis, neurasthenia, etc.) were treated by urethral dilatation, topical applications to the deep urethra and prostatic stripping by rectum — usually with good, if not permanent, results.

Strictures were treated by gradual dilatation — successfully in all of our series but one, which was referred to hospital for operation.

Venereal warts were treated by snipping off and touching up the base with chromic, nitric or acetic acid.

Balanitis was satisfactorily treated by the usual means of surgical cleanliness.

The few cases of senile prostatic disease were treated for the complicating cystitis, one had had a prostatectomy performed ; others were advised to submit to operation, but none of those in this series accepted this advice.

RESULTS.

As to the results of treatment, we may preface by saying that these probably represent good average results, certainly no worse than average for this or other clinics of this class. Certainly in this clinic within the past few years, with graduate assistants replacing undergraduates, there has been a marked improvement in the detail work and apparently in the results. Accordingly, though it was obvious that some patients were attending too irregularly to get much benefit of treatment, yet we were not prepared for so poor a showing as to attendance and finished results. So far as we know or can judge, the attendance, or lack of it, would be much the same for other months of service.

The net data are as follows:

As to syphilis there are no data beyond those of diagnosis and transfer.

Of 29 chancroids, 11 were discharged cured or practically healed; 10 disappeared improved but not healed; 5 disappeared after only one or two visits; 4 disappeared early, unimproved; 2 were sent to institutions; 2 were doing badly when last seen. Two cases had buboes when first seen and there was one bubo with a healed chancroid. No buboes developed under treatment.

Of the acute gonorrheas, 20 were cured in four to twelve weeks; 30 quit uncured after some treatment; 80 did not return at all after one or two visits.

Of the chronic anterior gonorrheas, 22 were discharged cured; 11 were uncured at the time of the last entry.

Of the chronic posterior and anterior infections, 7 were cured, 9 were not. Fifteen others came but once or twice.

Of the chronic prostate and vesicle cases (including post-infective infiltrated prostate with vesicles obstructed but not infected), there were 11 in all. All were temporarily relieved, though none were discharged as cured.

Of the strictures one was sent to the hospital for operation, the rest were effectively treated by gradual dilatation.

METHODS.

From these results it is possible to deduce relatively little as to the most useful methods. The series of chancroids is perhaps best worth study, for a series of 29 cases of soft sores with 25 fairly well followed and without a fresh bubo is not the usual showing, nor was it previously the rule in this clinic under other older methods. We believe that the disinfection with strong carbolic acid for one minute, followed by alcohol, while it does not always cut short the infection, at least helps to disinfect, and certainly has a marked advantage in that it leaves no slough. It is to the fact that no sloughs were left, and that the patients were elaborately cautioned to remove all scabs at each of the frequent home dressings, that we would attribute the good results. It is apparently a fact here, as in general surgery, that a thoroughly drained wound however infected will rarely give serious glandular infection. Certainly this aim in treatment will bear emphasizing in relation to chancroids and bubo formation.

As regards the treatment of the urethral infections, the moral as to methods is less simple. It is a question if the *totals* here given show anything except rather poor average results. From the study of *individual* cases and records, however, the writers are only confirmed in their conviction gained by observation in private practice, that it is desirable in all save a few very acute cases to give all acute anterior gonorrheas active local treatment with copious and frequent irrigations, combined in favorable cases with the use of protargol or other silver germicide. This seems to be the ideal treatment up to date. Later in the disease astringent irrigations, medication by the endoscope and graduated stretching have their place. Posterior infections seem to do best under not too frequent local treatment, begun only after the stormy stage is past.

On this basis of treatment we get results pretty consistently in proportion to the faithfulness, frequency and skill of the local treatment.

In past years we have all had a relatively large experience in this same clinic with the results of the usual home injections with the old-time clap syringe, using all sorts of injections, including some of the organic silver germicides. As a consequence nearly all of the surgeons have abandoned this scheme of treatment as far as possible. The average results were no better, the number of relatively serious mishaps much larger, and we did not then get the early and excellent results now not infrequent under proper care.

Properly carried out, irrigations in the hands of the physicians are much safer, and the method if persistently followed is capable of curing some early cases in two weeks or less, of greatly diminishing the frequency and severity of posterior urethral involvement and consequent complications, and of greatly promoting the comfort of the patient during treatment even where cure is not prompt. The method has no disadvantages *per se*, except the time and trouble required.

It is satisfactory, however, only when consistently carried out; on an irregular and irresponsible class of patients it does not therefore show greatly better *average* results than may be seen with average treatment — or perhaps with no treatment at all.

We see, however, no reason for dropping desirable methods because patients who do not come fail to get cured, and we are still confident that except for better technique we are not now likely to benefit by any change in routine.

PART II.

THE BROADER QUESTION.

The broader question for which we ask further consideration is that of the conduct of gonorrheal cases in a public clinic — the other classes of cases require no special remark.

With regard to the gonorrheal cases the real question is, not what is the best treatment, but what is the best clinic routine. We believe there is no question that active local treatment is the ideal method, and feel sure that few of those who have thoroughly worked over the curative (as distinct from the palliative) treatment of gonorrhea will disagree with us.

Such treatment we have attempted to carry out as a clinic routine — what the results are under routine conditions we have seen. Certainly they do not show up very well, and the discrepancy between the results here and in properly handled office practice is obvious. Certainly we can hardly be satisfied with curing only one-quarter to one-third of our cases as we now do. As we have said, it does not seem wise to return to old methods — they were no better even in the general average and with much less possibility of doing good: the newer methods we are carrying out as well and as faithfully as we can. Can we do anything to change the conditions under which we work?

The problem is a rather complex one, for a clinic that treats venereal disease has various responsibilities. The ordinary out-patient clinic provides opportunities for the cure or relief of the patient, for the education of the attending surgeon, for the instruction of the student. All this the venereal clinic must do, and beside this must discharge a duty to the public in combatting, so far as may be, the prevalence of venereal disease and that neglect of its treatment which so largely favors its spread. Through education of the practitioner and of the student, and by direct education of the public, this must be accomplished. Let us take up one by one these objects of our work, and it becomes clear that in no respect are we accomplishing what might be desired.

CURE OR RELIEF OF THE PATIENT.

As things stand, a proportion of patients are rapidly and permanently cured without complications. A smaller proportion recover after some weeks as a result of our treatment — so far good; but both these classes in our list together include but 15%. What have we done for the rest? 61% we certainly did not benefit, for they came to the clinic but once or twice anyhow. The other 24% drifted off — somewhat relieved in many cases, but not cured. Undoubtedly many of these cases got well, but it is too large a stretch of optimism for us to consider ourselves responsible if they did. We are very apt, it is to be feared, to consider ourselves very useful and to give ourselves the benefit of every doubt. Would it not be fairer to say frankly that we are curing something under 20% of our gonorrheal patients and that 80% of them receive no substantial benefit from our treatment?

EDUCATION OF PATIENTS AND THE PUBLIC.

This is most important perhaps of all our aims, save that of cure. If a patient has a broken leg it matters little what he thinks about it — he usually believes what we tell him and lets us do what we can. Not so with gonorrhea — the public is too amply misinformed. Every man has heard that it is "no worse than a cold," and

as a rule he knows several liars who "always cure their doses right up without any trouble." If we tell him that the disease is a serious one, and that safe and effective treatment involves much trouble and may take some time, he has no notion of believing us.

Time is likely to modify his personal notion of the seriousness of his case, but he does not change his theory; he simply considers himself "a hard luck case," and blames any treatment he may casually have subjected himself to as the reason for his continued trouble, and tries something else. The old rooted idea that gonorrhea is a troublesome trifle, and serious trouble the rare exception, sticks like a burr.

Beyond this the patient may in a public clinic learn by observation that venereal disease is not always a jesting matter, and he learns that we doctors consider gonorrhea serious, possibly very serious, and not likely to be quickly cured. What he does not learn is that it is curable in most cases under proper conditions, with proper skill and care, in far less than the time usually taken. The difference in results between "santal-midi" and the average of the clinic is not obvious enough to him to outweigh his inertia.

This is not theory but fact, and humiliating as it is to admit, it must be admitted that a very large share of the popularity of our dispensary clinic is due to the fact that "Mixture XVI" is good and cheap and is dispensed only to its patrons. It is certainly a good copaiba mixture, but it has no virtues different from those that other mixtures have, and at best can only shorten an attack, and usually only masks it. But it must certainly not be seriously contended that we are having full success in educating the public so long as it uses us, with our consent, largely as a cheap and handy drug store.

PROTECTION OF THE PATIENT'S FAMILY AND OF THE PUBLIC.

In so far as we cure — definitely cure — our cases, we help in this direction of course. In so far as we simply palliate and diminish a discharge with copaiba or the like, we probably do more harm than good so far as the public protection is concerned. The man who transmits gonorrhea is not the man who has a florid discharge, but he with whom "it comes back when he stops taking the medicine," in short, the man who is fooling around a clinic or drug store. In so far as we make the patient comfortable and tacitly agree that he is doing very well when he is really doing very ill, we encourage indifference on his part, and endanger rather than protect the public.

EDUCATION OF THE PHYSICIAN OR SURGEON ATTENDING.

Such of us as have the privilege of working in a clinic of this sort year after year have an opportunity for learning to treat minor genito-urinary surgery and venereal disease that is of the greatest value. What we learn is pretty directly proportionate to our intelligence and effort. Personally we can complain in no way of the present status except in so far as we are forced to waste time on irresponsibles.

EDUCATION OF THE PRACTITIONER.

It is obvious that this is very important, both in regard to the indirect education of the patients and in regard to improving the routine treatment. In this community, at least, it is apparently inevitable that gonorrhea should as a rule be treated by the general practitioner rather than the surgeon or specialist. The rôle of the latter is to run a clinic, to treat a few cases, to serve in times of trouble and consultation, and to impart what he may of knowledge acquired by special experience to his fellow practitioner.

It requires no argument to prove that the average practitioner has a somewhat scanty knowledge of the cure of venereal disease, and is over much under the influence of the older palliative methods of treatment or the spell of advertised "ethical" cures. That this may be helped is obvious, but this must be done in large part by example rather than talk. Such example is best given in the practice of public clinics. That the effect of such example is nullified by the ragged and apparently inconsistent results under present conditions is obvious. If we are going to convince others we must have not occasional but consistent good results to show.

EDUCATION OF STUDENTS.

The present system is gravely defective in this respect. The student has been taught in the schools as a rule a somewhat theoretical and incoordinate idea of the pathology and treatment of gonorrhea. The textbooks are, with few exceptions, full of the history and natural history of genito-urinary disease, and hopelessly vague and behind the times as to actual treatment.

The student brought in actual contact with cases is naturally and logically impressed with the fact that the cases he sees under treatment are mostly doing rather badly. He must, if normally skeptical, conclude that the statements given as to the better results of better conditions are rather likely to be rose-tinted. So far as can be judged, the average student who has had clinical instruction in genito-urinary work usually learns to do irrigations rather inefficiently, while he not infrequently acquires a profound distrust of their efficiency, or of the use of any local treatment.

Having been a layman before he was a student, he usually knows that the drug-store type of treatment is the one under which most of those infected do well or ill, and against a return to it in his practice he has to balance only an assurance on our part of the better results of a better method which we demonstrate, but the actual results of which he has seldom, if ever, seen.

This running survey will perhaps illustrate our meaning when we say that the present routine fullfils none of its functions to any satisfactory extent, except in so far as it offers opportunity to the surgeon in charge to learn his work.

Self-deception is very easy, and no doubt we all feel that we are doing a vast deal of good to such cases in our clinics, but on closer inspection is it so? It seems to us doubtful to say the least.

It does not seem in our judgment that we can accomplish more by any change from the present general routine; our change must come from a more rational attitude on the part of the patient.

Mere talking (telling patients what we think and believe they should do) is useless.

It may be argued that better work and better results will bring about a better attitude on the part of our clinic. To this may be answered that in the past few years there has been an improvement in the work of this clinic in all respects and an improvement in the results in patients that are attending to the business in hand, but no visible improvement in the general attitude. At best not all results can be good, and now the good results are swamped in the flood of "casuals," with whom we are temporizing.

We are, in short, temporizing and playing with a problem we should confront, with the result that we are not in any direction accomplishing what we should for the energy expended.

Our duty as medical men is to cure disease where we can, and it would be neither humane nor wise to exclude from our help those with venereal disease. However, despite the tales we hear, gonorrhea in males is very rarely acquired, save in the usual way; when the patient has so acquired it, we may be sorry for him, but it is a question if our professional duty must impel us to look to his comfort alone — to let him do as he pleases, when he pleases, and in so doing to jeopardize what power we have to improve the standard of treatment and to combat the prevalence and spread of gonorrheal disease in general.

It seems to us of first importance that we should help the patient in proportion as he will help himself, but that our larger duties should be paramount to our obligation to try to help those who care little or nothing for our help. It is far better that we should help educate the profession and the public and raise the standard of treatment in gonorrheal and venereal disease at large by limiting ourselves to conditions where we can give adequate example and instruction, than that we should confine ourselves to the vague philanthropy of doing what little we can for everybody. If we were to adopt a sort of discipline in a clinic of this sort, consent to treat only such patients as would consent to follow out directions and come back when told to, entirely discontinue the complacent ordering of copaiba mixtures and Royal P. syringes; and refuse to tolerate the man who "meant to come back earlier, but got to drinking last week" and all the other irresponsibles who fall from good but weak intentions, we should be better off.

There would be some apparent, but only apparent, hardship. Patients can always go elsewhere — even now they drift from clinic to clinic; they can always be treated somewhere as we now treat them — on their own terms. We have rather an excess to-day of all sorts of clinics. There is no danger that the poor will be neglected if they seek aid. As to others than the poor, they do not belong in a clinic. The single man with gonorrhea whose work makes it impossible for him to attend regularly at any clinic should not in most cases be obliged to depend on a clinic for his care.

By limiting our care, then, to those who deserve it, we should inflict little or no hardship. Should we not better discharge our professional duty? Surely we could under such conditions give more and better care to the patients who did attend to business. We could do better work in observation for the benefit of ourselves and others. We should be in better position to influence the work of our brother practitioners in this line of cases, and we should be able to ensure much better work by the practitioners of the future by giving adequate and really demonstrated instruction to the student of to-day.

What has been written here is on our part a deduction from past experience in clinic work as well as from study of the data cited above. So far as possible we have given our reasons, and our conclusion, debatable of course, is here presented for discussion.

We believe that it would be for the best interests of all concerned that a special genito-urinary clinic should treat cases of gonorrhea only under such conditions as are in the surgeon's judgment consistent with proper treatment and good results. This is not to be taken in any way as a criticism of the present use of genito-urinary clinics at large, — the good done in other classes of cases more than justifies them, — it is simply our answer to the question as to the proper treatment of gonorrhea in such clinics — an expression of our conviction that some discipline and regulation is needed in such clinics if we are to make them of proper service.

SOME PRINCIPLES INVOLVED IN THE THERAPEUTIC APPLICATIONS OF RADIOACTIVITY.[1]

BY WILLIAM ROLLINS, BOSTON.

IN 1900 experiments were made on animals to determine the value of radioactivity in diagnosis and therapeutics. The results as relating to diagnosis were briefly referred to so far as they were apparent with radium 1,000 in a paper, "The Cathode Stream and X-Light," in the *American Journal of Science* for November, 1900. With the more powerful radium now available the results may be different. No report of its therapeutic uses was made at that time, but radium 1,000 was made into capsules, with non-radiable walls to limit the action to the diseased tissue. These were given to Dr. Williams, and recommended for use in treating lupus and superficial cancers. Later (1901), radium of greater strength was used. As the experiments on animals had shown radium to have a potent effect on

[1] This paper was submitted for publication September, 1903.

tissue, attention was called to its use in therapeutics in the BOSTON MEDICAL AND SURGICAL JOURNAL for Jan. 23,1902,while waiting for Dr. Williams to report his experience. Now that Mr. Lockwood has formed a company to extract radium from Utah carnalite, radioactive substances are certain to attract more interest in the therapeutics of the future, when ether waves and emanations will receive attention in the medical schools, professorships of ether and radioactive therapeutics being established; therefore it may be well to mention some precautions, after stating a few facts, not easily accessible, about radium which is selected as a type of radioactivity. The Curies, who discovered radium and polonium, found radium gave off ether waves of various lengths — some long enough to affect the eye as light, others longer, or heat waves. In addition to ether waves, the Curies, Strutt, Rutherford and Soddy have found radium sends off particles of various sizes: A-particles, about the mass of hydrogen atoms, which constitute 99% of the radioactivity. These have positive charges. They are easily absorbed by thin layers of matter; cardboard, for example. Their activity is reduced one-half by aluminum 0.005 mm. thick. They are about one hundred times as hard to deviate in a magnetic field as the next form, or B-particles, which are only a thousandth as large, negatively charged and supposed to be the same as the cathode stream particles in an x-light tube. They penetrate further into substances, being reduced in intensity one-half by aluminum 0.5 mm. thick. The third form of activity, or gamma rays, have not yet been certainly deviated by a magnet. They are very penetrating, their intensity being reduced one-half by aluminum 80 mm. thick. Whether they are ether vibrations or flying particles is not certain.

For the present when using radioactive substances in internal therapeutics the substances cannot themselves be employed, on account of their high price. Advantage must be taken of the investigations of physicists like Rutherford and Soddy, who have shown when a radium salt is dissolved in water it gives off "emanations," which can be collected in air in a gas-holder over mercury and used in internal medicine as first recommended by Soddy. When radium is dissolved, 75% of its radioactivity is at once liberated, the 25% remaining consisting of A-particles. When the first rush is over, radium in solution is constantly giving off more emanations, the amount being as great as in the dry state. This is important to remember, for it shows radium in solution can be depended on as a constant source of emanation to be used in therapeutics. Even the emanation itself can be employed to produce fresh radioactivity. If a small volume of air containing the emanation is put into another gas-holder containing air, the whole volume will rapidly become radioactive, the intensity increasing until balanced by the rate of decay through the metal holder. In this connection it may be well to mention that radioactivity is an attribute of many substances, all the common metals, for example, show it. From mercury Strutt has obtained so radioactive a gas as to make it probable that part of the therapeutic action of this metal is due to radioactivity, and this may be true of other substances now used in therapeutics. Air enclosed in cylinders of common metals like copper, tin and zinc becomes radioactive.

One writer has proposed placing a glass tube of radium in the middle of a cancer. The experiments on animals, which have been mentioned, indicate this would be unwise, for before the peripheral parts of the new growth were affected, the destruction of both healthy and diseased tissue near the radium would have resulted, for the intensity of the action varies roughly as the square of the distance from the radium, therefore the tissues within a millimeter of the radium would receive twenty-five hundred times as powerful a treatment as those five centimeters away, and the continued presence of the radium, which would be necessary to affect the peripheral parts, would prevent the formation of fresh healthy tissue in the interior.

But it is with reference to diseases on or near the surface that the results of the experiments on animals will be considered now, and when radioactive substances are used for this purpose the following precautions are to be observed:

As the radiations and emanations of the radioactive substances spread in all directions, and some of them have destructive powers on animal tissues, the radioactive substances must be used in tubes, cases, plasters, etc., with non-radiable walls, that the activity may escape only in the required direction and be reinforced by the induced radioactivity from the inner surface of the container. This precaution is necessary to prevent injury to the physician and healthy tissues of the patient. Particular attention must be given as with x-light to the protection of the eyes, as animals can be made blind by radioactive substances as well as by x-light.

In using the radioactive substances in disease of or near the skin, the depth of the diseased tissue to be affected must determine the distance at wnich the radioactive substance is placed from the surface of the patient, for the reason mentioned, — activity diminishes approximately as the square of the distance, though really more rapidly on account of the complex nature of the activity.

If the radium is placed ten centimeters from the skin, the intensity at a depth of one centimeter is nearly as great as at the surface for the more penetrating forms of activity. In many cases, therefore, the sound tissues below the diseased will be acted upon by a destructive agent whose activity would be nearly as great as at the place of disease. The correct way in treating a skin disease with a radioactive substance is to consider to what depth it is desirable to confine as far as possible the activity. If to a slight depth, the radioactive substance should be almost in contact with the skin, the duration of the application being of proper length but always shorter than when at a greater distance. In this case healthy tissue at a depth of one centimeter

would be acted on by radiations and emanations whose intensity would be less than one-hundredth of those striking the skin; obviously a more scientific method.

In regard to the construction of containers for limiting the radiation to the area to be treated, the plan of wooden cases, either stationary or held in the hand and made non-radiable by paint, composed of an oxide of a heavy metal like lead, which were recommended in using x-light, may be employed, metals being substituted for wood, as the fact of their being conductors of electricity is unimportant. Any heavy metal, lead, for example, is suitable. When radioactive substances are used in the form of plasters which require to be flexible to allow them to be adapted to the patient, the back of the plaster should be of material which is made fluorescent by the radioactive material, for in this way the unused radiations are rendered less destructive. The substance of the plaster is to be made like a condenser, of alternate sheets of lead or tinfoil and oiled cloth or paper, and charged from some convenient source of electricity, for such a construction is more non-radiable to the A and B-emanations than an equal thickness of metal in solid form. This condenser construction is applicable to the walls of the tubes or cases to be held in the hand, and containing the radioactive substances, when it is desirable to have the source of activity at a greater distance from the skin,— as it will be to a greater extent than at present when the price of radium is reduced sufficiently to allow it to be employed in a sufficiently concentrated form to use in treating internal diseases by allowing the activity to enter through the skin.

When this is the case, the precautions as to distance should be observed which have already been given for the use of x-light under the same circumstances.[1]

Professor Barker of Philadelphia suggested several years ago that the radioactive substances might take the place of x-light in surgical diagnosis. It was on the strength of his statement the experiments mentioned were made with radium 1,000; though with this the results were unsatisfactory, it would be well to repeat the experiments with pure radium bromide, which can now be purchased by any rich person.

Medical Progress.

PROGRESS IN ORTHOPEDIC SURGERY.

BY ROBERT SOUTTER, M.D., BOSTON.

(Concluded from No. 19, p. 518.)

ARTHRITIS is the rule if there is bone disease near a joint. This is the reason arthritis is so common in children, where the epiphysis is apt to be diseased. Osteomyelitis is in the diaphysis, away from the synovial contact. Points where ostitis are most frequent, arthritis is rare and late in coming on.

By arthritis is meant suppurating arthritis, not serous or plastic, due to neighboring inflammation. Osteomyelitis may spread rapidly, and attention will be on the joint rather than the bone.

Then there is a very detailed account of growth of bone, and particular emphasis is placed on the Y-shape of the cotyloid, at the junction of the three pelvic bones. Invasion of the hip joint comes from the head, not the trochanter of the femur. Of course infection may come from the femur neck or trochanter, but these are rarer and slower than from bones of the joint. Herein is Koenig right in his true coxitis and his osteomyelitis.

Whether the Y-cartilage of the glenoid, the cartilage of the head or the joint becomes involved, the clinical aspect and treatment are regardless of the origin; therefore the clinical aspect and treatment warrant simultaneous consideration.

There may be bone disease of ilium or of the neck and trochanter, but where the head or the glenoid cavity bones are affected the joint will be involved as a rule. Dislocation is favored by the disease of the round ligament and capsule. Perforations are commonest at the junction of the pubo-femoral and ischeo-femoral portion of the capsule, also under the psoas tendon. This is rare, but is more common in adults than in children. Generally perforation is behind. Dislocation is rare without bone lesion.

Pseudo-luxation may occur, due to:

(1) Disease of ligamentum teres and the glenoid cavity being filled with granulations.

(2) From division of the head and neck.

(3) Due to erosion of the head, which is then smaller.

Broca believes the outcome of mild and severe non-tubercular coxitis depends on early diagnosis and vigorous treatment. Disease of the femoral epiphysis or acetabular disease is nearly always complicated with purulent arthritis. Pericerticular drainage will often be sufficient. Unless there is serious disease in the capsule at the time of operation, resection need not be done. Mortality is 50%. Good results by drainage of the joint without resection. Excision is performed in very severe cases only.

H. L. Taylor[2] reports on 40,027 cases; 13,000 cases of tuberculosis, two-fifths being of the hip. Primary lesion being nearly always in the cancellous tissue near an epiphysis. Primary *synovial* tuberculosis is very rare. Insidiousness is characteristic of tuberculosis. Early symptoms are: limitation of motion, limp, anxious expression.

Suppurating arthritis of infancy is acute infectious. Aseptic evacuation is followed by recovery; it seldom becomes chronic. Taylor notes the antagonism of rickets and tuberculosis and of rheumatism and tuberculosis; also one case of gout and tuberculosis.

[1] Boston Med. and Surg. Journ., April 24, 1902; Electrical Review, July 25, 1903, Note 166; Electrical Review, Aug. 15, 1903, Note 167.

[2] American Medicine, 1902.

Shortening is due to:
(1) Lack of growth of the affected leg.
(2) To restraint of the affected leg.
(3) Overgrowth of the well leg.

Ponmiceano and Bolintineano [4] of Bucharest report a cinemetograph study of walk in hip disease. The report confirms what we are used to seeing: patient drags affected leg, does not lift till it passes the vertical; the step is longer with that leg, that is, he rests a shorter time on it; patient leans forward and toward well side; the upper extremities are flexed and used in balancing.

Lance [5] has several interesting articles on disease of the bones about the joint. Tuberculosis of the pelvic bones without coxalgia occurred but 38 times in 1,000 cases observed in nine years. Early cases of abscess with little or no limp, the coxitis must have been secondary to disease of bones about the joint. This he confirmed by x-ray very often.

John Dane of Boston [6] studied the amount of motion allowed by hip splints and points to the value of grasping the pelvis in obtaining good fixation rather than the thorax which by leverage increases jar on hip, unless the leg, thigh, pelvis and thorax are immobilized by a plaster or leather spica. The amount of motion allowed by each splint as measured by him will be given later.

Special cases have been reported:

La Gin Chagua [7] reports 16 cases of spontaneous dislocation of the hip in coxitis. Jouon, a rare form, a forward dislocation in coxalgia; the only one he has found in literature. Begoim, rapid development of tubercular disease with dislocation on pubes.

Treatment. — Lubloff [8] immobilizes in hip disease, using for position that which would be most favorable in case ankylosis should occur. He does not favor osteotomy where ankylosis is not complete, nor does he favor excision. For fixation he prefers Billroth's spica, including both hips and thighs from the ribs to the knees and the weight of body supported on tuberosities of ischium. Abscess is treated by iodo-glycerine injections.

Senn believes that where with good treatment the general health fails excision and clearing out of all diseased tissue of the acetabulum, with removal of the trochanter, is indicated. After thorough cleaning out of all tissues wound is packed with iodoform gauze. Tampon is removed and replaced as may be necessary, the whole heals almost by first intention. By removing all foci rigorous disinfection, an early change in dressing is not necessary, that is, iodoform gauze should remain one to two weeks.

Lane [9] of London makes an incision from anterior-superior spine transversely over trochanter to posterior-superior spine, including all muscles, divides glutei tensor vaginæ femoris. He says there is little bleeding (if one is quick). In this way the posterior-superior and anterior parts of the joint are exposed. The tissue and the joint are cleaned out thoroughly and filled with sulphur gauze; in 48° under an anesthetic he cleans away any slough. This is repeated in 48°, again in 48° S. O. S. When clean he puts in cyanide gauze, repeats, and when all is clean and dry the muscles and ligaments are sutured and limb put in best possible position.

Downs operates early in hip disease, especially when there is abscess —
(1) To evacuate pus.
(2) To ascertain extent of disease.
(3) To drain.
(4) To see if excision is necessary.

Excision is indicated if head and neck are extensively diseased and when epiphyseal line is involved, even if head and neck are normal. Excision of head and neck is wrong without removing the great trochanter.

Excision is indicated earlier in weak children, and always where rise of temperature shows mixed infection and when caries and necrosis are present. He uses a rapid method: a small opening is made in the capsule and the pus evacuated; then the Deyon instrument is put in; and in fifteen minutes for the whole operation, or ten minutes for actual, he is able to clean out the whole disease.

E. H. Bradford [10] reports successful dislocation of hip, with drainage of joint for acetabular disease used as an extreme measure. In another extreme case with persistent night cries, other means being exhausted, the hip was flexed and adducted and held this way by plaster of Paris. This put the adductor muscles out of commission and was successful in relieving the case.

Archambaud [11] treats hip disease mechanically without immobilization ; report of 71 cases only one death. He corrects deformed position and uses Hessing's apparatus with an axillary crutch, bodily massage, etc.

Vulpius [12] thinks that in tubercular coxitis early excision is indicated where there is profuse suppuration, necrosis and high fever. He uses immobilization with plaster of Paris.

Lovett [13] in a report on the value of traction alone or fixation alone finds that traction is the more valuable. Both are often necessary in order to limit the amount of motion well inside what nature allows. It is logical to use a splint suited to each case:

The ordinary

(1) Hip splint with three and one-half pounds of traction and one peroneal strap allows 35 to 40° of motion in flexion.

(2) With almost unbearable traction 15° of motion.

(3) Dr. Dane shows that with three and one-half pounds and two perineal bands, 16 to 27°.

[4] Zeit von Orth., 1902.
[5] Rev. Orthop., Paris, 1902.
[6] Trans. Amer. Orthop. Ass., 1902.
[7] Paris, J. Roussae, 1901, 80.
[8] Archiv. f. clin. Chir., lxiii, 67.
[9] Med. Press and Circ., Lond., lxxi, 341.
[10] Trans. Amer. Orthop. Ass., 1902.
[11] Rev. Orthop., Paris, 1902.
[12] Zeit. Orthop., ix, 4.
[13] Trans. Amer. Orthop. Ass., 1902.

(4) The Dane splint with one band, 9 to 11° motion.

(5) With two bands, 6° motion.

(6) The Lovett [14] splint allows even less. It is for this reason particularly adaptable to cases with 20 to 30° of motion in flexion and less. Severe cases will often not have to be kept in bed.

R. W. Lovett [14] advises the ordinary splint for cases with 45° or more of motion; the Dane splint for cases with 25 to 35; the Lovett splint for cases with 20 to 30° or less.

Hoffa [15] reports 30 cases of subtrochanteric osteotomy with much improved walk and with markedly less fatigue in walking.

Young [16] says operations in hip disease can be avoided by early vigorous treatment, as shown by cases in private practice. Deformity requires correction. Cases may require aspiration or incision for abscess; erosion, excision or amputation. Indications and methods are given.

There is a report by Dr. Walker [17] on the use of creosote as an anti-tubercular treatment. The urine was negative; even with very large doses the patients seemed more comfortable, had fewer night cries; but little effect on the disease and often bad temporary gastric disturbance is noted.

Jouon [17] reports a case of dislocation in tubercular coxitis reduced successfully eighteen months later.

Myers suggests the use of pneumatic perineal straps.

Leroux [18] reports great success in the marine treatment of tubercular bone and joint disease.

Reports of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

SECOND SEMI-ANNUAL MEETING, HELD IN NEW YORK CITY, OCTOBER 13 AND 14, 1903.

(Concluded from No. 19, p. 524.)

(SECOND DAY — *Concluded.*)

TECHNIQUE OF OPERATIONS ON THE TONGUE.

DR. R. H. M. DAWBARN of New York read this paper. He advocated the operation of removal below the jaw, and particularly the ligation of the external carotid, before attacking the submaxillary triangle. Experience had shown that this procedure was not likely, as had been supposed, to lead to secondary hemorrhage. The author also strongly advised that the patient be so placed as to prevent the entrance of fluids into the air passages, and that after the operation no pillow should be allowed under the head. A better procedure than packing the mouth was the rubbing of aristol into all raw surfaces.

[14] Trans. Am. Orthop. Ass., 1902.
[15] Zeit. Orthop., 1902.
[16] Am. Orthop. Ass., 1901.
[17] Archiv. Ped., N. Y., xviii, 525.
[17] Rev. d. Orthop., Paris, 1902.
[18] Rev. Orthop. Paris, 1902.

DR. A. T. BRISTOW of Brooklyn disagreed with the author regarding making the ligation of the external carotid the first step of the operation. He liked to spend a week in such preparatory treatment as removing carious teeth and having the other teeth frequently scrubbed with an antiseptic solution.

DR. A. A. VAN DER VEER did not favor the postural treatment, and expressed the belief that the patient should not be kept in bed longer than was really necessary.

DR. W. G. MACDONALD of Albany also disapproved of the postural treatment, and said that he ordinarily expected to see his patient up the day after operation.

DR. A. ERNEST GALLANT of New York spoke of the influence of unskilled etherization in the production of post-operative pneumonia.

POTABLE WATERS.

DR. E. S. WILLARD of Watertown was the author of this paper. He said that a bacteriological examination was of more service than a chemical one in determining the potability of water. The quality of cistern water depended largely upon the material of which the cistern was constructed. If of metallic construction, these parts should be coated with asphalt and paint. There was no objection to cement except that it made the water a little harder. The two principal systems of water purification were the English system of slow sand filtration and the American system of rapid mechanical filtration. The latter method included the use of some coagulant, such as alum, by which the suspended matter was deposited.

DR. F. C. CURTIS of Albany commented upon the laxity of the municipalities in this country as compared with those of Europe. Taking the mortality rate as a measure of the purity of the water supply, he said that the rate in New York city was 20 to 25, whereas in London and some large European cities it was only 10 or 15. Previous to the installation of the filtration plant in Albany in 1899, the rate in that city had ranged from 50 to 120, but had since been 15 or less.

CONSERVATION IN PELVIC INFECTION.

DR. JOHN O. POLAK of Brooklyn argued from the results obtained in 79 cases of acute infection in favor of a modification of Pryor's iodine treatment.

DOSAGE: A PLEA FOR PROPER MEDICATION. FIRST PAPER — DIGITALIS.

DR. A. JACOBI of New York presented a paper with this title. He pointed out that although digitalis leaves after having been kept for a year in a tight tin box appeared unaltered, even on microscopical examination, physiological experiments showed that this drug had lost more than 50% of its potency. When a prompt and decisive action from digitalis was required, neither powdered digitalis nor the infusion should be prescribed. Digitalin, being a glucoside, was a very uncertain preparation, so much so, indeed,

that oftentimes a quantity equal to ten times the theoretical dose would be found inert. In chronic diseases of the valves and muscle of the heart, digitalis might be given with benefit to adults for months at a time in a daily dose of four to six grains.

THE DISPENSARY TREATMENT OF TUBERCULOSIS.

Dr. J. W. Brannan of New York described in this paper a method of treating tuberculosis which was about to be used in the city dispensaries. The plan was to utilize the dispensary for examining these patients and instructing them; to send a nurse to the patients' homes to see that the instructions were enforced and to see that the patients received proper food.

Dr. James A. Miller of New York, who had already gained experience in this kind of work at another dispensary, stated that the patients were provided with paper sputum pouches, each pouch costing one cent, and being used for twelve hours or less. The patients were weighed and inspected once a week, and once a month were subjected to a thorough physical examination. Out of 160 dispensary patients so treated during the past six months, 49 were now in active occupations.

THE CAUSES AND PREVENTION OF INFANT MORTALITY IN NURSERIES AND ASYLUMS.

Dr. E. H. Bartley of Brooklyn was the author of this paper. Among the more important causes of morbidity mentioned were inherited weakness, starvation, neglect, overcrowding, improper diet and infectious diseases. In the management of diarrheal diseases it was important to isolate the patient, disinfect the napkins and exclude or destroy flies.

A MODIFIED ALLIS ETHER INHALER.

Dr. A. F. Erdmann of Brooklyn exhibited this modification, intended to overcome certain difficulties met with in adding ether to the inhaler while the patient was in the Sims' position. The modification consists in cutting transversely through the side of the rubber sheath a slot about one-quarter of an inch wide and three or four inches long, and in using a metal or rubber cap on the ether inhaler as required.

SYMPOSIUM ON TYPHOID FEVER: A LOGICAL DEFINITION OF TYPHOID FEVER.

Dr. H. A. Fairbairn of Brooklyn in this paper discussed the general nature of this disease, insisting that its clinical manifestations varied so with the particular organ or organs in which the infection was focused that errors must needs arise if one considered only its clinical aspect.

ANOMALIES AND DIFFICULTIES OF DIAGNOSIS IN TYPHOID FEVER.

Dr. Henry L. Elsner of Syracuse presented this paper. He said that the prodromal period varied greatly, both as to length and severity. Thus it might extend over several weeks, and be practically afebrile; again, it might only last three or four days and be attended by urgent symptoms. These severe cases usually terminated in death in about two weeks. Some studies that he had made of the blood pressure showed that typhoid fever was characterized by a low arterial pressure, being 130 to 140 mm. in adults, and correspondingly low in children during the first week. The pressure was rarely high except in the presence of complications. A tremulous condition of the tongue with fibrillary twitching he had learned to look upon as quite characteristic of the early days of typhoid. In a series of 110 cases he had found diarrhea present in only 84, while many had been constipated. In only 8 of the cases was no eruption found, although in some instances only a few spots were detected, and these in unusual locations. An early and positive diagnosis of typhoid in infants was rarely made; nevertheless, continued fever in a child without localized disease and with enlargement of the spleen should lead to a suspicion of typhoid. The presence of leucocytosis would argue against typhoid. Sepsis and endocardial infection must not be forgotten. The most that Ehrlich's diazo reaction could do was to excite one's suspicion that typhoid was present; it was not to be compared to the Widal reaction for exactitude.

THE MANAGEMENT AND TREATMENT OF TYPHOID FEVER.

Dr. Egbert LeFevre of New York took up this phase of the subject. Referring to milk diet, he pointed out that, in the process of digesting milk, the latter was coagulated in the stomach into masses of variable size and hardness and that the stomach of the typhoid patient found difficulty in thoroughly disintegrating these coagula. Under an exclusive milk diet the stools were larger and contained more undigested food than when a mixed or semi-liquid diet were employed representing the same quantity of proteids, carbohydrates and fats. Another point that should not be forgotten was that whereas in other diseases in which an exclusive milk diet was considered advisable, the patient was gradually accustomed to the digestion of milk, in typhoid fever the physician usually felt called upon to pour large quantities of milk into his patient's stomach so soon as he had made the diagnosis of typhoid. For these reasons Dr. Le Fevre said he believed in varying the diet somewhat, though making it an invariable rule to give no food to a typhoid patient that could not be passed through a fine wire sieve. Water, either plain or acidulated, with hydrochloric acid or lemon or orange juice, was very acceptable to the patient, and the diet might well be varied by giving coffee, cocoa, tea, kumyss and junket. Sometimes it was well to grate up stale bread and pass this through a fine sieve. Such a dietary he had found produced less tympanites than an exclusive milk diet. The addition of egg to milk made the latter more difficult of digestion, but

when the afebrile stage had been reached, the yolk of an egg could be stirred into bouillon or soup. A cold jelly bouillon was taken with a relish by many of these patients. When there was intestinal hemorrhage, it could be satisfactorily controlled by dissolving half an ounce or an ounce of commercial gelatin in a pint of water, and giving the patient from 2 to 4 oz. of this mixture at short intervals. It was very important to clear out the bowel daily by means of an enema, and where purgatives by the mouth seemed to be indicated he preferred phosphate of sodium, sulphate of magnesium, or, best of all, small doses of castor oil. When stupor, delirium, respiratory and gastrointestinal disturbances showed the need for an intestinal antiseptic, such remedies might be prescribed, but their administration should not be governed by the degree of fever. The routine use of a bath whenever the body temperature reached 102 or 103° F. was now rapidly falling into disuse, and more than three or four baths a day were rarely needed. The speaker advocated the use of acetanilid or phenacetin in small doses, because when so given they quieted the nervous system and improved the patient's general condition without depressing the heart. If quinine were given, it should be in an initial dose of 15 gr., and followed by 5-gr. doses every six hours. He thought it was a mistake to give strychnine in large doses as a routine measure; it should only be given when the heart flagged and in doses to meet the indications. In this disease he believed alcohol was both a stimulant and a food.

THE ITHACA EPIDEMIC.

DR. L. COVILLE of Ithaca read a paper with this title, which he illustrated with lantern views. He said that there had been 1,300 cases of typhoid in the first six months, and about 80 additional ones during the past summer. The latter had been traced to the infection of a broken well by a walking case of typhoid. It was worthy of note that for nearly two years the citizens of Ithaca had received warnings of the pollution of their drinking water, and there had even been a few cases of milk typhoid every autumn for several years. Last December the type of the disease suddenly changed; the disease became more virulent, and the cases no longer failed to give a positive Widal reaction. Constipation had been the rule during the epidemic, and most of the patients presented a peculiar dull red throat, such as is commonly seen in gouty subjects. There were 79 deaths. Of the 300 cases seen by Dr. Coville, 150 agglutination tests were made, and in most instances a positive Widal reaction was obtained between the third and tenth day of the disease. Among the remarkable features of this epidemic were: the great variations in the course of the disease, the comparative freedom from relapses and the absence of milk infection. It was also interesting to note that no plumbers working in infected houses and no employees working in the sewers or at the city pumping station developed typhoid.

THE LESSONS OF THE ITHACA EPIDEMIC.

DR. GEORGE A. SOPER of the State Department of Health spoke on this theme. He said that not only was Six-Mile Creek infected, but there were probably one hundred sources of this infection. It was strange that although the citizens of Ithaca, the local board of health and even Cornell University knew of the danger which menaced the health of the city, nothing was done to avert the calamity. Nothing was done for a long time after the epidemic started to check the progress of the disease. The local board of health seemed powerless, there was no system of reporting infectious diseases, so that new cases could not be ferreted out, and several thousand of the people continued to drink the city water. So far, $25,000 had been expended in the effort to suppress the disease. About $10,000 of this sum had been spent in laboratory work and in the compilation of statistics. The State Board of Health had had the water from nearly every well in the city analyzed, and about 30% of these were either poor or positively dangerous.

THE EPIDEMIOLOGY OF TYPHOID FEVER.

DR. CYRUS W. FIELD, 2d, of New York read this paper. He said that typhoid fever was disseminated chiefly in three ways: (1) By personal contamination; (2) by pollution of the water supply, and indirectly, of the milk supply; and (3) by means of household insects. It had been proved that the typhoid bacilli could live in ice for five months and that soiled clothing might prove a source of infection for two or three months. Not infrequently the urine as a source of infection was overlooked, and it was very common to see hospital internes handle typhoid urine as carelessly as ordinary urine when making urinary examinations.

DR. J. L. HEFFRON of Syracuse opened the general discussion on typhoid fever. He said that it was rather remarkable that although typhoid had been first differentiated from typhus by an American physician, and although many important additions to our knowledge of typhoid had been made by Americans, the people of this country should allow Europeans to surpass them in the attention given to the protection of the water supply from infection by this disease. Practically every one of our public water supplies were to-day so infected, and it was not uncommon for one community to allow its sewage to pass on and infect another water supply. It was high time that physicians should move in this matter, and see to it that each city water supply was protected by the installment of a competent purification plant. With regard to diet in typhoid fever, he desired to commend to the thoughtful attention of the profession generally the admirable paper just presented by Dr. LeFevre, particularly his discussion of the exclusive milk diet in typhoid. As to so-called intestinal antiseptics, he desired to say that for the past two years he had been using acetozone, and while it was not very agreeable to take, it cer-

tainly was the most efficient remedy of this class that he had ever tried.

Dr. A. Jacobi said that as the typhoid bacilli not infrequently were present in the urine long after they had disappeared from the feces, it behooved the careful medical practitioner to look well after this too commonly neglected source of infection. He desired to take issue with Dr. LeFevre concerning the use of acetanilid, whether in small or large doses. The action of this drug was to convert hemoglobin into methemoglobin; in other words, it does just what chlorate of potassium does when it produces poisoning. Acetanilid was an anilin poison, and the most dangerous remedy of this group. It very commonly gave rise to cyanosis, showing its profound effect on the blood.

Dr. LeFevre replied that he had never seen any bad results from the use of 2 or 3 gr. of acetanilid in febrile conditions, except in persons presenting an idiosynerasy. Moreover, he had at one time made examinations of the blood of a number of persons taking acetanilid, and had been unable to substantiate the assertion that acetanilid destroys the hemoglobin.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

SEVENTEENTH ANNUAL MEETING, HELD MAY 12–14, 1903, WASHINGTON, D. C.

(Concluded from No. 19, p. 521.)

(Third Day — *Concluded.*)

REMARKS ON SURGICAL TREATMENT OF CHRONIC BRIGHT'S DISEASE BY RENAL DECAPSULATION.

Nephritis in both kidneys might often be found existing in connection with movable kidney on one side. In this case nephrolexy might improve the patient's condition by arresting the process, although it might not cure the disease where pathological changes had taken place to the same degree that a patient was cured of typhoid fever, pneumonia or some other disease of this nature where resolution had taken place. Pousson believed that there was a sympathy between kidneys as between eyes, and an operation on one would frequently relieve the condition existing in the other. This idea was applicable to cases of nephritis that had come under his observation, in which he found by urethral catheterization all the evidences of nephritis of both kidneys, and yet some time after nephroplexy of one organ the common urine coming from both organs showed no evidence of Bright's disease, although the percentage of urea did not come up to the normal in the twenty-four-hour specimen. In chronic nephritis tension was relieved by splitting the capsule. He did not believe that it was necessary to entirely decapsulate the organ in order to afford relief. Those who had split the capsule of the kidney over its convexity would remember the gap which developed at this point when this covering had been holding the organ tightly and this gland had been congested. M. Mongour was of the opinion that diminishing the renal venous tension would increase the arterial tension and thus favor the flow of urine. Splitting the capsule, and to a certain degree decapsulation, would also by diminishing the blood tension take the strain off the heart by necessitating a diminished flow on its part. It was still a question with the author whether it was better to partially decapsulate the kidneys and to make them fast to the abdominal wall, or fully to decapsulate and return them to the fatty capsule. From the firm adhesions which he had seen between the kidney and the posterior abdominal wall, and the scant vascularity he had observed in the fatty capsule, he felt that the former method might later be the one of choice. Again, it was not well known just how much of the blood supply could be obtained from the fatty capsule, and he had not noticed reports of the estimate of the amount of additional circulation derived in this way from autopsy records. Experiments on dogs, according to Dr. Johnson of San Francisco, tended to show that the blood supply obtained from the fatty capsule was very meager. Dr. Johnson said that the renal capsule consisted of two layers, the outer of which is thicker. In decapsulation the outer always came away leaving the inner lacerated, but adherent. After decapsulation a thin exudate appears on the surface, which with the remains of the inner layer of the old capsule became a fibrous investment resembling microscopically the normal capsule of the gland, in that it stripped readily and became more and more fibrous. In some cases it was thicker and in some cases thinner than the original. Generally it was thicker after two months, according to Albarren and Bernard. Up to three and one-half months it was simply a fibrous mass, when it could be differentiated into two layers. In no case was there a considerable anastomosis between the renal and perineal blood channels. Even if the relation of a dog's kidney to the surrounding tissues was not the same as those in man, it was still probable that the reconstruction of the capsule was the same, and this reconstruction in three and a half months would probably indicate the renewal of tension in the kidney, and consequently the recurrence of the symptoms. It might also account for the many deaths that occurred after this period. It seemed to him that as long as the patient with chronic Bright's disease was comfortable and ridding himself of sufficient solids, we should treat him in a conservative way by means of diet, waters and medicines. But if the process was advancing rapidly, and there was fear of the heart becoming overtaxed, the time had arrived for operative interference. In cases of interstitial nephritis operated upon, the albumen and casts might disappear, but the amount of solids given out in the urine might still remain the same. In almost all cases reported there had been some uremic symptoms and varying degrees of edema, while in a number of cases there had been general

anasarca. In the first group of patients, those having some uremic symptoms of chronic edema, an operation could be resorted to in case medical treatment was of no avail. In cases of anasarca, especially if the heart was very bad, it was a question whether one should operate or not. Some have said that this was the time that operation was imperative, but the histories give a mortality of 50% in these cases, 25% were unimproved and finally died, and but 25% were cured or improved. He had never had the courage to operate in these cases. After all operations the patient must be kept quiet for some time and treated medically. In chronic nephritis, when the patient was passing little or no urine, operation was imperative. Drs. Marx and Whitacre had operated in such cases with marked success. On the other hand, Rockey operated upon a case for suppression, and lost the patient in twenty-four hours. Freeman operated upon a patient who was passing a fair amount of urine and in good condition, and the patient died in eighteen hours of suppression. In order to understand these cases better the separate urine from each kidney should be obtained by urethral catheterization and examined. It must be remembered that operation for chronic nephritis by decapsulation was as yet a new procedure and might require many modifications. We could remember when hysterectomy, prostatectomy, intestinal anastomosis and even hernia were considered difficult and dangerous operations. Therefore we might hope that sometime these hopeless cases might be cured radically and without danger by the surgeon's knife.

DR. GEORGE M. EDEBOHLS of New York said that he had not yet reached any definite conclusions regarding the value of this operation, and certainly not as definite as those reached by Dr. Guiteras. It would be from two to five years before it would be known exactly just what the operation or its modification would do for these patients suffering from Bright's disease. He said he would not go into the subject fully, because his views had already been published in the *New York Medical Record* March 28, 1903. Out of 59 patients operated on 11 could safely be considered in the ranks of permanent cures. Before a patient should be placed upon the list of cures he said he should be free from albumen and casts for a period of six months at least, and continuously. The improvement that had followed this operation had been so uniform that it offered encouragement to continue the work. As one absolute result he mentioned the increased excretion of urea; where the output before operation may be below one hunded grains per day, it would be increased to five hundred grains per day within four or five weeks. In his published articles he had tried to subdue his enthusiasm, but his results had been better than pictured; every patient had been relieved of their headaches, backaches, the circulation had been improved, the heart's action improved, and some patients seemed to pass from an apparently hopeless condition to one of comfort. The operation itself he considered to be a very simple one. If Bright's disease affected a movable kidney he would not anchor that kidney unless it presented symptoms that were due to that condition; if such symptoms did exist he then anchored it. When such kidneys are returned to their fatty beds, often they become more or less fixed, due to the infiltration about them. Two weeks ago he was able to examine the kidneys removed from a patient on whom he had performed this operation four months prior. This death was independent of any kidney operation. Serial sections were made and enormously dilated and enlarged blood vessels were shown, which penetrated from the fatty capsule through the capsule proper into the kidney substance. The capsule proper was shown to be reproduced. Further findings in this examination will be published later.

DR. EUGENE FULLER of New York reported two cases he had operated upon; in one there was a marked amelioration of the symptoms; in the other no report could be made because the patient passed from his view.

DR. ARTHUR T. CABOT of Boston reported favorably regarding the operation. He thought we should discriminate more in regard to the selection of cases for operation.

SUB-PARIETAL INJURIES OF THE KIDNEY.

DR. FRANCIS S. WATSON of Boston read this paper. He said that a personal experience of five cases of sub-parietal injury to the kidney had recently led him to make a thorough study of the subject, in the course of which he had collected, formulated and analyzed clinical data of 660 cases, which included all previously published cases of importance. This investigation brought to his notice a number of points which had hitherto received little or no attention. (This paper was published in full JOURNAL, July 9 and 16, 1903.)

DR. EUGENE FULLER of New York reported an interesting case. A butcher's helper had one quarter of a beef fall on his shoulders, from which he experienced considerable pain on one side and increased frequency in micturition, and blood in the urine shortly after the injury. He had been around to different places, and cystoscopic examinations revealed nothing. Dr. Fuller cut down upon a tumified mass and found an immense cold abscess holding over a pint of thick pus. The walls of the abscess cavity were three-quarters of an inch in thickness and very dense and fibrous. No kidney could be found. He thought that, at the time of the injury, a rupture of the kidney occurred with extraperitoneal clots of blood, which gradually broke down into pus; the back pressure probably destroyed the kidney.

OBSERVATIONS ON THE EFFECT OF CATHETER DRAINAGE ON THE FUNCTION OF THE KIDNEYS IN INTERSTITIAL NEPHRITIS AND PYELONEPHRITIS.

DR. ARTHUR TRACY CABOT of Boston read this paper. He termed his paper a study in patho-

logical physiology. He urged operating surgeons to observe more closely the behavior of organs under the varying conditions which they themselves imposed. By such observations many important contributions to pathological physiology have been made, and doubtless many others were under our eyes waiting to be noted. (For the full paper, see JOURNAL, Nov. 19, 1903.)

OFFICERS ELECTED.

For President, DR. EDWIN C. BURNETT of St. Louis, Mo.; for First Vice-President, DR. F. TILDEN BROWN of New York; for Secretary, DR. JOHN VAN DER POEL of New York. Next place of meeting, St. Louis, Mo.

Recent Literature.

A Narrative of Medicine in America. By JAMES GREGORY MUMFORD, M.D., Assistant Visiting Surgeon to the Massachusetts General Hospital and Instructor in Surgery in the Harvard Medical School. pp. 508. Philadelphia and London: J. B. Lippincott Co. 1903.

Dr. Mumford has undertaken a difficult task, and has accomplished it admirably The book is interesting from cover to cover, and if it had nothing more to commend it, this is saying much when we consider the usually uneventful lives of the persons it portrays. As its title indicates, the book does not pretend to be a systematic history of medicine, but rather a narrative of conspicuous men and events during the earlier periods of medical history in America. The narrative, for sufficiently obvious reasons, stops at about the middle of the last century, omitting, therefore, the era of greatest progress. Beginning, then, with colonial medicine in the seventeenth and eighteenth centuries, Dr. Mumford gives us an excellent sketch of the prominent men of this early time and, more important than this, a picture of the general crude character of medical theory and practice, and of the popular attitude toward medicine as a profession. As the author frequently points out, it is somewhat pathetic to see how completely the names of the men who were leaders in their day have passed out of mind, and how little impress the individual made npon medical progress. In Dr. Mumford's opinion Boylston is the only American physician deserving a permanent place among the masters up to the middle of the eighteenth century.

The more conspicuous work of Rush, Smith, Warren, Shippen, Bard, Jones, Morgan and many others, with the stirring events of the Revolution, are graphically described. One also gets from this part of the book an excellent idea of the first attempts at systematic medical education in Philadelphia, New York and Boston. The early part of the nineteenth century receives detailed description. Particularly interesting is the account of the gradual development of surgical practice, with the innumerable difficulties which beset it before the discovery of ether. Among the physicians of this period, Chapman, Francis, Gibson, Jackson, Drake, are some of the notable men to whom critical attention is drawn.

A chapter each is devoted to the discovery of ether, the founding of the American Medical Association and some tendencies in modern medicine. The circumstances attending and following the introduction of ether are told in a spirit of fairness, which cannot fail to commend this chapter to students of this curiously involved controversy. We also cordially commend to our readers the history of the foundation of the American Medical Association, a subject about which many of us are too ignorant. The final chapter of the book on "Some Tendencies in Modern Medicine" is a fitting ending to this altogether satisfactory volume. Naturally enough, the question of specialism is discussed, based on a statistical inquiry, which is suggestive, if not conclusive. Here again the author stands in the attitude of a disinterested spectator, and views the facts as they are. We may well ponder what he says of doctors new and old.

For such a book we have no word of adverse criticism. As we said at the outset, Dr. Mumford has set himself a laborious task, which he has completed in a way to deserve the gratitude of all who are interested in medicine, whether within or without the profession. The book is eminently readable, and has a style of its own, which often suggests in its characterization of men the epigrammatic manner of President Eliot. It should certainly have a wide reading.

Essays on Clinical Medicine. Being reprints of papers published at various times in the *American Journal of the Medical Sciences.* By BEVERLEY ROBINSON, A.M., M.D. Philadelphia: William J. Dornan. 1903.

Dr. Robinson has collected and published in book form various papers dating back to 1889, which have already appeared as journal articles. The papers are largely given over to disease of the heart and lungs, with the addition of an early paper on "Creosote as a Remedy in Phthisis Pulmonalis," a discussion of uremia and "A Study of Some Cirrhoses of the Liver." The papers are the result of a wide personal experience, and as such should receive an attentive and cordial reading.

A Manual of Medical Treatment or Clinical Therapeutics. By I. BURNEY YEO, M.D., F. R. C. P., Emeritus Professor of Medicine in King's College, London, etc. Tenth edition; fifteenth thousand. Vols. I and II. Chicago: W. T. Keener & Co. 1902.

These two volumes are of convenient size, the first containing 696, the second 762 pages not including the indices. The text is written in an interesting manner, and the subject matter has been surprisingly well brought up to date when it is borne in mind that this is a tenth edition. The two volumes present the status of medical treatment to-day, and do not aim at being original.

THE BOSTON

Medical and Surgical Journal

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PHYSICIANS' LIABILITY INSURANCE.

No physician can contemplate with equanimity the possibility of suits for alleged malpractice. The chief anxiety, however, is not that he may suffer in pocket, but rather in the high reputation and good name that he bears in the community. Most physicians, if sued, would spend their last dollar in defending themselves against what they deem a wicked and blackmailing assault upon their good reputation and their slender savings. From long experience they know better perhaps than any other class of men that many if not most actions of tort against moneyed defendants are but legalized robbery. When, therefore, a case comes home to themselves they, conscious of no wrong-doing, cannot but regard a malpractice suit as a kind of blackmail levied under forms of law.

Physicians, in the treatment of their patients, may be ignorant, careless, and neglectful, and may thus inflict injuries which will be recognized and resented by honest patients; for these injuries compensation through legal channels may be sought by the aid of lawyers of high standing and integrity. Few suits for alleged malpractice, however, can be regarded as honest efforts for the redress of real injuries. The skilful, experienced and careful practitioner may be, through no fault of his own, the object of attack. Indeed, it is the skilful and successful physician who suffers rather than the ignorant and unsuccessful.

Now for the annoyances, not to say the mental and physical distress and money loss; what is the remedy which, on the whole, will prove the wisest, the most just, the least expensive?

We have had a large experience in studying civil malpractice suits in this Commonwealth; and we have done our share in trying to demonstrate the truth upon the witness stand. We know that most suits are absolutely without good foundation, and unsupported by medical evidence worthy of serious consideration. We know that ignorance and carelessness are human, but we are convinced that human errors are less likely to occur under the responsibilities of life and health than under the responsibilities of business and property. Yet, try as one will to do his best, one may, for one reason or another, become forgetful, careless, indifferent. Indeed, in spite of the greatest care, one may do things which, from their very nature, cannot be satisfactorily explained before a lay jury. The discovery of a gauze sponge in the abdomen during convalescence from a laparotomy is, for example, an experience which few abdominal surgeons have escaped, even when more elaborate precautions against this accident have been taken than against any other in the operative technique. We know that such an occurrence is in the long run unavoidable, especially in those abdominal emergencies in which success requires the highest skill in operative technique and the greatest speed in its completion. In explaining to a jury, this, — the nightmare of abdominal surgery, — the surgeon would, at best, cut but a sorry figure. No effective defence under these conditions seems possible; and yet the surgeon, far from being careless or ignorant, has been careful, painstaking and experienced. His chief horror is in the occurrence of just this accident; he has taken care in every way to provide against it; and yet he overlooks the sponge. In every conceivable lesion, medical and surgical, he may be called upon to show, to the satisfaction of a jury, the wisdom of his treatment. He cannot see, perhaps, in any case how he has been at fault. Indeed, he may, when especially pleased with his work, find himself blamed; or, when blaming himself, find himself praised.

Now, knowing that he may be accused of malpractice with or without good grounds, mulcted in large damages, proved careless and ignorant against the evidence or the weight of evidence, harassed perhaps for years by relentless counsel, — admitting these truths, what is the sensible man to do? Ought he not to copy the man of business, who provides against disaster by timely insurance? A moderate annual premium will insure the physician, if not against the anxieties and the loss of time incident to a

trial at law, at least against the loss of money. The physician, however, is fighting rather against attacks upon his reputation than against financial loss. To preserve his reputation he would gladly sacrifice his money. Moreover, he fears that when an insurance corporation stands behind him, he will lose that sympathy which has hitherto made juries so reluctant to bring a verdict against him; that a rich and fresh field will be opened for successful legal exploitation; and that he will suffer more than he does now, if not in pocket, in what he values more, — his reputation and his peace of mind.

We ourselves fear that there is much in the last consideration. Inadmissible as the evidence may be, the court, try as it may, cannot keep from the jury the fact that behind the physician stands the rich corporation. The judge may charge the jury against the prejudice which corporations inspire, but they will nevertheless be influenced by that prejudice. Their sympathies will not be, as now, either with the physician or divided between physician and patient: they will be entirely with the patient; and the physician, fighting for his good name, will find that good name smirched by an adverse verdict. Furthermore, is not this experience likely to be more and more frequently repeated?

Again, according to some insurance policies, the company has the right to settle claims against it in its own way — at its own time. Rather than fight a case, even one in which the physician is clearly not at fault, and in which he may be sure of a favorable verdict, the corporation may choose the cheaper way of settlement. In this case the insurance company will have done that which the physician would have spent his last dollar to prevent — it will have forced upon the physician the practical admission of culpability when he felt himself guiltless, insulted and aggrieved. True, if he wishes to fight the case when the insurers wish to settle it, he can, at his own risk and expense, do so. Is it not a fair inference — or at least a grave fear — that the liability companies may at times sacrifice the physician's good name to save themselves expense?

Within the last two weeks two malpractice suits have been tried in Massachusetts. In both suits the physicians had been advised to make the best settlement that they could. In neither would they consent to compromise, even though the compromise could have been effected for a sum much less than the probable cost of trial. In one case the jury disagreed; in the other there was a verdict for the defendant. These physicians, in fighting to the last against what they considered a wrong and an injustice, have done much to discourage similar suits against other physicians. On the other hand, these suits compromised, as we feel sure they would have been under liability policies, could not but encourage other suits.

The restraining effect of insurance on the number of suits for malpractice is said by the insurance companies to be great. This may well be doubted unless the companies fight in every case. A policy of settlement to avoid the expenses of litigation would, we feel sure, encourage and multiply these actions of tort. Many physicians are undoubtedly threatened by suits for malpractice by unscrupulous men who hope, by working upon the physician's fears of publicity, to extort from him small sums in settlement. Against actions of this kind an insurance policy would undoubtedly be discouraging.

There is one form of insurance which really insures against suits. The company, for a certain premium, agrees to spend in any year the principal in actually defending the physician; it does not agree to pay the verdict. Here, it seems to us, is the real insurance that the physician needs — insurance which discourages suits by fighting them to the highest courts of the land; which tries to protect, from first to last, the physician's *amour propre* and reputation; which yields better than anything else that peace of mind so essential to the physician's welfare, and gives him the assurance that he has a friend, and a powerful one, in the time of the greatest professional annoyance that he can possibly undergo. We admit that a policy of defence of this kind, with another covering the money liability, has given us a peace of mind which the ever-dreaded malpractice threat had never before permitted. When confronted by a bad result, a complaining patient, a threatening letter, the physician turns at once to the consoling thought that he has a strong and resourceful defender.

On the whole, we are becoming convinced that liability insurance is a good thing for physicians. The faults in the systems, if any now exist, as is quite possible, will in time be corrected, and the medical profession will not so frequently be placed in the humiliating position of explaining and justifying to an ignorant jury some of the most trying and important acts and decisions of a professional life.

ATHLETICS FOR GIRLS.

ATHLETICS for men have come in for their share of criticism and discussion during the past few years. The football question is perennially discussed in the lay and medical press with no other effect visible than an increased popularity of the game. The question of athletic exercises for girls is of somewhat more recent date, but is apparently one capable of as diverse opinion as is expressed in the case of men. The growth of the athletic spirit in girls' schools and women's colleges has given rise of late to a certain skepticism as to the value of it all, and whether or not the more violent exercises in the way of competitive sports have not been carried to a harmful degree.

No doubt girls of good physical health have been stimulated by the prowess of their friends of the other sex to undertake games which of late years have brought in the element of competition, wnich secondarily has led to public games and sports. So important has the matter become in the minds of those interested in the physical training of girls and women that at a recent meeting of the Boston Physical Education Society, Miss Hill, director of physical training in Wellesley College, started the discussion which has since grown to large proportions. In her investigations Miss Hill had found that girls in a suburban school undertook the most vigorous forms of exercise, like running and jumping, and had boy coaches and no competent woman instructor. The girls also held field days.

Another instance cited was the uncontrolled playing of basket ball in unventilated rooms without proper medical supervision. As a result of Miss Hill's comments, a committee from the Physical Education Society has been appointed, with Miss Hill as chairman, to look into the matter. The committee is working slowly to determine, if possible, all the elements entering into the problem of the health of girls, and particularly of the relation between the school or college and the parents. Miss Hill is in general of the opinion that exercises for girls at school have been improperly regulated up to this time, that there is a growing tendency among young girls to indulge in sports which lead to publicity, and possibly through over-excitement and over-exertion to positive injury. Competitive games for girls she does not believe in.

To any one who has seen a modern game of basket ball played by young girls, the feeling must have been uppermost that the exercise was of such a character that a few years ago it would have been thought possible only for vigorous boys. We have no desire or intention to criticise the playing of basket ball, or any other game of skill by women, provided only, as Miss Hill suggests, their training be properly regulated; in other words, with certain modifications, precisely the same principles should apply to the training of women for athletic sports as to that of men. The question of the appropriateness of women taking part in public exhibitions does not in the least concern us. On the other hand, we are convinced that the modern athletic tendency among women has been a helpful one, and that properly regulated it should lead to a stronger and better-equipped race of women than we have had heretofore. There certainly can be no reason why all such sports should not be completely regulated to meet the physical organization of women. In the meantime it must be remembered that athleticism may be and in fact is overdone by certain enthusiasts, especially when enthusiasm is combined with the inexperience of youth.

THE NOBEL PRIZES.

WE have from time to time commented on the fact that prizes have increased in number quite beyond their usefulness and that the end to be subserved is frequently lost for various obvious reasons. In the first place, there are evidently too many prizes. The credit which comes to the successful competitor is too small to attract the best men, and there is certainly in many quarters a feeling that it is rather beneath the dignity of the scientific investigator to expose his wares for money. It is perfectly clear to any one who observes, that the ablest men do not attempt to gain the ordinary prizes, and it has frequently been the experience of prize committees that no essay worthy of the award is received. Furthermore, the offering of money is not in general an adequate stimulus for scientific work, although we are glad to admit that occasionally the combination of financial need and ability go hand in hand. In general we regret to see money left for the purpose of establishing prizes. The self-respect of the scientific world would certainly be enhanced if much of the money for this purpose could be withdrawn.

Standing in a wholly different category from this type of prizes is the foundation which renders possible the so-called Nobel prizes. We have in this foundation an ideal method of encouraging the best scientific research, and it is

a gratification each year to see very considerable amounts of money bestowed upon men who by general consensus of opinion have achieved something notable in science or literature. It will be remembered that by the terms of this foundation, made in 1895, upward of eight million dollars was left to encourage original work in five different departments of learning, among which medicine was included. Notices have been recently sent out for the suggestion of a candidate for the prize in the section of physiology and medicine to be given during the year 1904. By this general vote of the scientific men of the world, an eminently just decision is usually reached regarding the value of work done during the preceding year. The final award comes as a surprise to the recipient. He has made no effort to gain the prize beyond an abstract devotion to scientific work of the highest order.

It will no doubt be many years before another foundation of the amount and character of this is established, but we have no hesitation in expressing the hope that, if money be left for the encouragement of research, it may take some such form as this rather than make a personal appeal to the cupidity of the contestants. The one is altogether worthy of the highest scientific ideals, and the other, we are forced to admit, tends rather to detract from than to add to the ends of science.

EUTHANASIA.

A FLURRY of excitement appears to have been aroused by certain utterances of the Rev. Mr. Wright, a New York clergyman, on the subject of euthanasia. Mr. Wright has recently made the suggestion that persons with incurable disease should be relieved from their sufferings by artificial means. Naturally he has safeguarded this proposition by various suggestions, such as the consent of the person concerned, of his family and of a jury composed of physicians and possibly of a clergyman. There was nothing particularly original in the point of view expressed. It has no doubt been discussed at various times and places since the days of the Greeks. The fact remains that a public protest, both from lay and medical sources, has arisen such as Mr. Wright, no doubt, little expected. The fact of the matter is that this question of hastening death under any circumstances whatsoever is not to be talked of in public. That euthanasia is at times produced most legitimately there can be no question. That a general doctrine should be spread abroad urging the production of painless death in certain conditions as a routine measure will always receive the condemnation it deserves. This is one of the many matters which may best be left to the individual discretion of the physician and to the family, as well as to the sufferer himself.

The question continually presents itself to the physician in active practice, whether or not, in cases which are eventually fatal, it is wise to postpone death through various possible artificial means, such as stimulation of the heart or artificial feeding. We are inclined to think that the consensus of opinion now is that it is the part of humanity to allow a patient to die without such artificial stimulation when the inevitable end could in any case only be postponed. Here again principles are certainly not to be laid down. By far the safest method, and the most in accord with our principles of morality, is to judge each case on its merits and to attempt no promulgation of a general theory.

MEDICAL NOTES.

THE ORGANISM OF SMALLPOX — At a meeting of the Section of Biology, New York Academy of Medicine, held Nov. 9, 1903, Dr. Gary N. Calkins spoke on "The Life History of the Organism of Smallpox," which has been named Cytoryctes variolæ Guar. It will be remembered that Dr. Calkins has been associated with the recent work on smallpox in Boston.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.— The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about one hundred and eighty dollars, will be made on July 14, 1904, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1904.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

ATTITUDE OF BRITISH PHYSICIANS TOWARD PUBLICITY. — It is stated that the British Medical Association not long since sent a request to the lay press urging that the names of physicians attending cases should not be made public in its columns, with the exception of those in attendance upon any member of the royal family.

LAW AGAINST THE CORSET. — The *Medical Record* makes the statement that a Dr. Maréchal of Paris is urging the passage of a law making the wearing of a corset by any woman under thirty years of age a penal offence. *Apropos* of this rather radical legislation, it is stated that a woman in Buffalo recently died through the penetration of her heart by a corset steel, and we have also been informed of a very serious x-ray burn resulting from the wearing of a corset during treatment. In spite of these occurrences, we imagine the corset will still remain in use.

KING EDWARD'S SANATORIUM. — The foundation stone of King Edward's Sanatorium for tuberculosis was laid Nov. 3 at Lord's Common in Sussex. It will be remembered that sometime since Sir Edward Cassel left about a million dollars for the purpose of providing a sanatorium for tuberculous persons in England. This is the beginning of the realization of that bequest.

A COLUMBIA UNIVERSITY HOSPITAL. — It is reported that the trustees of Columbia University are considering the possibility of constructing a hospital, to be under the control of the department of medicine. It is estimated that the preliminary cost of such a hospital will be in the neighborhood of two million dollars.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon Nov. 11, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 82, scarlatina 17, typhoid fever 13, measles 99, smallpox 0.

NEW ENGLAND DEACONESS HOSPITAL. — Exercises on the laying of the corner stone of the new Deaconess Hospital in Longwood were held Nov. 5. Among the speakers were Governor Bates, Dr. M. H. Richardson and Rev. Dr. James M. Buckley of Brooklyn, N.Y. Through vigorous attempts on the part of the management, upwards of $42,000 has been paid in, of which over $37,000 has been paid for land and other items. It is proposed to erect merely the left wing with a frontage of about one hundred feet, three stories in height. There will be accommodations for forty-two beds, together with adequate operating rooms and other accessories. This hospital has done a good work in an unostentatious way, and should receive sympathy and encouragement both within and without the profession of medicine.

NEW YORK.

MORTALITY STATISTICS. — The Health Department reports show that during the month of October the mortality in the city represented an annual death-rate of 16.05, as against 15.75 in September and 16.00 in October, 1902. The corrected death-rate, excluding non-residents and infants under one week old, was 15.19. Among the diseases which showed a decline in mortality were the following: The weekly average of deaths from whooping-cough decreased from 6.5 in September to 3 in October; the weekly average of deaths from acute bronchitis decreased from 27 to 23.5; from diarrheal diseases, from 151.5 to 86.25; and from diarrheals under two years of age, from 133.25 to 79.25. Among the diseases which showed an increased mortality were the following: The weekly average of deaths from diphtheria and croup increased from 28.75 to 34.5; from scarlet fever, from 4.5 to 5.25; from measles, from 3.25 to 4.75; from typhoid fever, from 16.75 to 18.5; from pneumonia, from 61.5 to 77.25; from broncho-pneumonia, from 36.5 to 43.5; from pulmonary tuberculosis, from 133.75 to 144.75; from cancer, from 43.25 to 49.25; from Bright's disease and nephritis, from 91.5 to 93; and organic heart diseases, from 71 to 86.25. During the month 4 deaths from influenza were reported.

ANOTHER PAVILION FOR ST. LUKE'S. — Through the generosity of Mrs. Plant, widow of the late Henry B. Plant, St. Luke's Hospital is to have another elaborate pavilion added to its buildings. This new structure will be located on the southeast corner of the hospital grounds, overlooking Morningside Park, and in its general features will resemble the two other pavilions facing on 113th Street. It will occupy the same area of ground as the others, or about seventy feet each way, although it will be somewhat taller, as the land on which it is to stand is lower than that around it. It will be connected with the Minturn Pavilion by means of a corridor, and the roof is to be provided with a garden and a solarium. The original plan of the magnificent new St. Luke's contemplated ten pavilions in all, and five of these have already been erected and occupied.

Union of Medical Societies. — At a meeting of the Medical Society of the State of New York held at the Academy of Medicine, New York, on Oct. 13, a resolution, offered by Dr. D. B. St. John Roosa, was adopted empowering the committee appointed some time ago for the purpose of conferring with a similar committee of the State Medical Association to take final action in the matter of the union of the two societies. As mentioned in the Journal, the committee of the State Association had previously been authorized by that body to take such action as would consummate the desired union.

New Appointments Columbia Medical School. — At a meeting of the board of trustees of Columbia University held Nov. 2, the appointment of the following new professors in the medical department was announced: Dr. Joseph A. Blake, Professor of Surgery; Dr. George E. Brewer, Professor of Clinical Surgery; Dr. John S. Thacher, Professor of Clinical Medicine; Dr. Frederick Peterson, Professor of Psychiatry; Dr. Samuel W. Lambert, Professor of Applied Therapeutics. Dr. George M. Lefferts, who has announced his intention of retiring from the chair of laryngology in June next, when he will have completed thirty years of service in the College of Physicians and Surgeons, presented to the university his extensive and valuable collection of apparatus for illustrating the teaching of laryngology and rhinology, and the trustees ordered that the apparatus should be hereafter known as " The Leffert's Collection."

Ratio of Street Accidents, New York and London. — It is stated that while no less than 538 persons were killed by vehicles in the streets of New York last year, information furnished from Scotland Yard shows that in the metropolitan district of London, with its 688 square miles of territory, the total number of such fatal accidents was but 158.

Correspondence.

MEMORIAL TO MR. WILLIAM CADGE.

Boston, Nov. 6, 1903.

Mr. Editor: Some members of our profession may be glad to know of the fund now being raised in England — memorial to William Cadge, the eminent writer and operator. His great success in the treatment of stone in the bladder is well known. Those desiring to contribute may send directly to Dr. Michael Beverley, Treasurer, Norwich, England. Subscriptions are limited to one guinea each.

Yours very truly,

H. H. A. Beach, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Oct. 31, 1903.

Cities.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,179	169	25.19	—	2.46	5.09	1.53
Chicago . . .	1,885,000	473	118	23.88	13.32	4.01	6.34	1.48
Philadelphia	1,378,527	466	106	22.96	7.51	1.50	.86	2.36
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	184	54	20.11	11.41	1.08	2.71	3.26
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	125	—	26.40	14.40	4.00	5.60	4.80
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	62	17	25.80	12.90	1.61	8.06	3.22
Boston . . .	603,163	159	49	20.52	12.58	1.89	5.03	2.52
Worcester . .	132,044	37	12	33.33	7.40	—	11.10	3.70
Fall River .	115,549	35	13	22.85	11.42	5.71	8.57	—
Lowell . . .	101,959	23	9	21.74	17.39	8.70	—	—
Cambridge .	98,639	17	6	29.41	11.76	11.76	—	—
Lynn	72,497	21	5	23.81	4.76	9.52	—	9.52
Lawrence . .	69,766	20	10	45.00	5.00	5.00	20.00	—
Springfield .	69,059	19	4	10.52	10.52	—	—	—
Somerville .	68,110	23	7	21.74	17.39	—	—	—
New Bedford	67,198	29	10	38.37	17.44	3.49	13.95	6.97
Holyoke . . .	49,286	10	7	30.00	20.00	10.00	20.00	—
Brockton . .	44,873	7	4	14.30	—	14.30	—	—
Haverhill . .	42,104	20	4	5.00	5.00	—	—	—
Newton	37,794	7	2	28.60	14.30	14.30	—	—
Salem	36,876	13	3	15.40	15.40	7.70	—	—
Malden . . .	36,286	7	2	—	—	—	—	—
Chelsea . . .	35,876	13	1	7.70	7.70	7.70	—	—
Fitchburg . .	35,069	—	—	—	—	—	—	—
Taunton . . .	33,656	14	2	42.84	21.42	7.1	21.42	7.14
Everett . . .	28,220	10	3	—	—	—	—	—
North Adams	27,862	5	—	—	40.00	—	—	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	—	—	—	—	—	—	—
Waltham . .	25,198	8	—	—	25.00	—	—	—
Brookline . .	22,602	—	—	—	—	—	—	—
Pittsfield . .	22,589	6	—	33.33	—	—	—	—
Chicopee . .	21,031	7	3	28.60	14.30	—	—	14.30
Medford . .	20,962	4	—	25.00	50.00	—	—	—
Northampton	19,883	5	1	—	20.00	—	—	—
Beverly . . .	15,302	5	—	—	—	—	—	—
Clinton . . .	15,161	3	1	33.33	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	2	1	—	50.00	50.00	—	—
Woburn . . .	14,300	4	—	50.00	—	—	—	—
Hyde Park .	14,175	—	—	—	—	—	—	—
Adams . . .	13,745	7	5	42.90	—	—	—	—
Attleboro . .	13,677	5	2	20.00	—	—	—	—
Marlboro . .	13,609	3	0	—	—	—	—	—
Melrose . . .	13,600	2	—	50.00	—	—	—	—
Westfield . .	13,418	7	2	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	—	—	—	—	—	—	—
Framingham	12,534	3	1	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	3	2	33.33	—	33.33	—	—
Weymouth .	11,344	1	0	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	1	—	100.00	—	—	—	100.00
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,044; under five years of age, 681; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 726, acute lung diseases 208, consumption 371, scarlet fever 19, whooping cough 12, cerebrospinal meningitis 7, smallpox 11, erysipelas 4, puerperal fever 7, measles 9, typhoid fever 62, diarrheal diseases 140, diphtheria and croup 84.

From whooping cough, New York 3, Chicago 1, Philadelphia 2, Baltimore 1, Pittsburg 2, Lowell 1, Woburn 1, Adams 1. From erysipelas, New York 2, Providence 1, Clinton 1. From smallpox, Philadelphia 8, Pittsburg 3. From measles, New York 6, Chicago 1, Philadelphia 1, Pittsburg 1. From cerebrospinal meningitis, New York 3, Boston 1, Worcester 2, Somerville 1. From scarlet fever, New York 7, Philadelphia 6, Baltimore 3, Boston 1, Worcester 1, Woburn 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Oct. 17, the death-rate was 15.8. Deaths reported, 4,573; acute diseases of the respiratory organs (London) 175, whooping cough 42, diphtheria 43, measles 45, smallpox 0, scarlet fever 35.

The death-rate ranged from 3.3 in Hornsey to 26.3 in Middlesbrough, London 15.3, West Ham 17.8, Brighton 15.0, Portsmouth 15.0, Southampton 11.8, Plymouth 13.0, Bristol 10.9, Birmingham 18.3, Leicester 13.3, Nottingham 17.6, Bolton 15.9, Manchester 20.3, Salford 24.2, Bradford 15.6, Leeds 15.3, Hull 13.0, Newcastle-on-Tyne 19.9, Cardiff 14.8. Rhondda 15.3, Liverpool 19.5, Sunderland 17.4, Sheffield 19.0.

METEOROLOGICAL RECORD.

For the week ending Oct. 31, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S..25	29.83	38	44	31	64	58	61	N W	N W	7	2	O.	C.	0
M..26	29.76	41	46	36	62	52	57	W	W	20	13	O.	C.	0
T..27	30.06	38	42	33	54	46	50	W	W	16	12	C.	C.	0
W..28	30.08	38	46	31	54	46	50	N W	N W	9	8	C.	C.	0
T..29	30.04	46	61	31	64	54	59	W	S W	9	11	C.	C.	0
F..30	30.07	58	69	48	69	56	62	W	W	12	9	C.	C.	0
S..31	30.14	62	71	52	59	36	48	W	S W	12	8	C.	C.	0
☞	30.00		54	37			55							0

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING NOV. 5, 1903.

VAUGHAN, G. T., assistant surgeon-general. Appointed as member of committee to consider and report upon the matter of uniforms and insignia for officers and employees of the Customs Service. Nov. 3, 1903.

CARTER, H. R., surgeon. Leave of absence for one day, Oct. 29, 1903, under paragraph 189 of the regulations.

BILLINGS, W. C., assistant surgeon. Relieved from duty at Quebec, Canada, and assigned to duty in office of the United States Commissioner of Immigration at St. Johns, N. B. Nov. 5, 1903.

KERR, J. W., assistant surgeon. Granted leave of absence for two days from Oct. 18, 1903, under paragraph 191 of the regulations. Relieved from duty at the Immigration Depot, New York, N. Y., and directed to proceed to Duluth, Minn., for temporary duty as medical inspector of aliens. Oct. 28, 1903.

STANSFIELD, H. A., assistant surgeon. Granted leave of absence for ten days. Nov. 2, 1903. Upon expiration of leave to report at Bureau, Washington, D. C. Nov. 2, 1903.

WILLE, C. W., assistant surgeon. Relieved from duty at Philadelphia, Pa., and directed to proceed to Baltimore, Md., and report to medical officer in command for duty and assignment to quarters. Nov. 2, 1903.

BOGGESS, J. S., assistant surgeon. Granted leave of absence for three days from Nov. 3. Nov. 2, 1903.

CLARKE, F. N., acting assistant surgeon. Granted leave of absence for twenty days from Nov. 8. Oct. 29, 1903.

ECHEMENDIA, D. M., acting assistant surgeon. Granted leave of absence, on account of sickness, for thirty days from Oct. 5. Oct. 16, 1903.

TAPPAN, J. W., acting assistant surgeon. Granted leave of absence for seven days from Nov. 2, 1903, under paragraph 191 of the regulations.

ACHENBACH, JOHN, pharmacist. Granted leave of absence for six days from Oct. 26, 1903, under paragraph 210 of the regulations.

BOARD CONVENED.

Board convened to meet at Baltimore, Md., Nov. 2, 1903, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon H. R. Carter, Chairman; Assistant Surgeon M. W. Glover, Recorder.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING NOV. 7, 1903.

ELLIOTT, M. S., surgeon. To the Naval Hospital, Norfolk, Va.

EVANS, S. G., surgeon. Detached from Naval Hospital, Norfolk, Va., and to the "Cleveland."

WHEELER, W. M., surgeon. Detached from the Naval Hospital, Newport, R. I., and granted leave for thirty days.

BLACKWELL, E. M., passed assistant surgeon. Detached from the "Hancock" and to the "Castine."

SPEAR, R., passed assistant surgeon. Detached from the "Wheeling" and to home and await orders.

ODELL, H. E., passed assistant surgeon. Detached from the Naval Hospital, Norfolk, Va., and to the "Wheeling."

MURPHY, J. A., assistant surgeon. To the Navy Yard, Washington, D. C.

RICHARDSON, F. A., acting assistant surgeon. To the Naval Hospital, Newport, R. I.

SCHWERIN, L. H., acting assistant surgeon. Detached from the "Yankton" and to the "Southery."

ELMER, M. K., assistant surgeon. Detached from the U. S. R. S. "Independence" and to the "Pensacola."

DARNEY, V., acting assistant surgeon. Detached from the "Pensacola" and to duty with Recruiting Party No. 4.

CHAPMAN, R. B., acting assistant surgeon. Detached from duty with Recruiting Party No. 4 and to the Navy Yard, Mare Island, Cal.

TAYLOR, E. C., assistant surgeon, and REEVES, I. S. R., assistant surgeon. To the Naval Museum of Hygiene and Medical School, Washington, D. C.

MARSTELLER, E. H., surgeon. To the "Columbia."

KENNEDY, J. T., passed assistant surgeon. Commissioned passed assistant surgeon with rank of lieutenant.

OHNESORG, K., passed assistant surgeon. Commissioned passed assistant surgeon with rank of lieutenant from March 3, 1903.

MILLER, J., CAMPBELL, F. E., assistant surgeons. Ordered to Naval Museum of Hygiene and Medical School, Washington, D. C.

HIGH, W. E. G., assistant surgeon. To the "Constellation."

SOCIETY NOTICE.

THE fourth annual meeting of the AMERICAN ROENTGEN RAY SOCIETY will be held at the University of Pennsylvania, Philadelphia, Dec. 9 and 10, 1903.

JAMES B. BULLITT, M.D., Secretary,
Louisville, Ky.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — There will be a meeting of the society in Sprague Hall, Medical Library Building, on Monday, Nov. 16, 1903, at 8.15 P.M.

Papers: F. G. Balch will report Cases of Intussusception; Dr. A. K. Stone will present a paper entitled "Cardiac Displacement."

ARTHUR K. STONE, M.D.,
Secretary.
543 Boylston Street.

RECENT DEATHS.

JULIAN J. CHISOLM, M.D. — Dr. Chisolm, who long held an enviable position as an ophthalmologist in Baltimore, died Nov. 1, in Petersburg, Va., at the age of seventy-three. During the greater part of his active life he was a frequent contributor to periodical medical literature.

DR. EMIL ROSENBERG of New York, who was the senior medical officer of the Northwestern Life Insurance Company, and who was widely known both in this country and abroad as an authority on the subject of life insurance, died on Nov. 4, at the age of seventy-four years. He was a native of Germany and was graduated at Berlin in 1855. He came to the United States in 1868, and has been a medical examiner for the Northwestern Company ever since that date.

BOOKS AND PAMPHLETS RECEIVED.

Ein Melanosarkom des Ciliarkörpers im allerersten Beginn der Entwickelung. By G. S. Derby, M.D., of Boston. Reprint. 1903.

Ueber die Abhängigkeit der Wirkung der Augentrophen von ihrer Temperature. By G. S. Derby, M.D., of Boston. Reprint. 1903.

L'Inoscopie. By André Jousset of Paris. Reprint. 1903.

L'Inoscopie. By André Jousset. Archives de Médecine Expérimentale et d' Anatomie Pathologique, Maro, 1903.

Septicémie et Endocardite Tuberculeuses "Primitives" Diagnostiquées Pendant La Vie. By M. M. Brallion et André Jousset. Reprint. 1903.

Des Septicémies Tuberculeuses. By André Jousset.

The Community and Tuberculosis. By Beverley Robinson, M.D., of New York. Reprint. 1903.

Congenital Dislocation of the Hip, and Lorenz's Method of Treating It. By J. Jackson Clarke, M.B. (Lond.), F.R.C.S. Reprint. 1903.

The General Practitioner and his Relation to Early Surgical Operations. By E. B. Montgomery, M.D., of Quincy, Ill. Reprint. 1903.

Preventive Medicine and Natural Selection. By Chas. V. Chapin, M.D., of Providence, R. I. Reprint. 1903.

Dirt, Disease, and the Health Officer. By Charles V. Chapin, M.D., of Providence, R. I. Published by American Public Health Association. 1903.

Original Articles.

OBSERVATIONS ON THE EFFECT OF CATHETER DRAINAGE ON THE FUNCTION OF THE KIDNEYS IN INTERSTITIAL NEPHRITIS AND PYELO-NEPHRITIS.

BY ARTHUR TRACY CABOT, A.M., M.D., BOSTON,

Surgeon to the Massachusetts General Hospital.

My contribution may best be termed a study in pathological physiology.

Physiology teaches us much about the behavior of normal organs under varying conditions; but the study of the manner in which diseased organs perform their functions falls to the clinician. Modern surgery, dealing as it does with vital parts, affords opportunities for physiological and pathological investigation which are becoming more and more appreciated. Surgery is one of the most important branches of experimental medicine. The operating surgeon has opportunities of studying the behavior of organs under varying conditions which he himself imposes. His work in this respect resembles that of the physiological experimenter. The full value of his experiments depends on the thoroughness with which he investigates the conditions existing before and after his intervention. By such observation, many important contributions to pathological physiology have been made and doubtless many others are constantly under our eyes waiting to be noted.

The kidneys are organs that offer an especially favorable field for this sort of study, and I offer to-day some observations on their functions as affected by the relief of pressure. This subject is a large one, and I do not propose to speak at this time of that part of it which relates to the relief of pressure by incision or stripping of the capsule, although I have a number of observations on the beneficial results of such operations.

I am going to speak of the effect of relief of internal pressure in the kidneys. An increase of internal pressure is brought about usually by some obstructive lesion in the outer urinary passages. A sudden and complete obstruction causes a cessation of renal excretion, but when this obstruction comes about gradually, the kidneys adapt themselves to it and go on separating the urine from the blood under a constantly increasing tension. The cases in which I have made my observations on this condition are those of old men suffering from obstructive disease of the prostate. The polyuria that insidiously establishes itself in such cases is well known. The urine gradually drops in specific gravity, but at the same time increases proportionately in quantity. The elimination of solids diminishes but slowly, for the urine makes up in quantity what it lacks in quality. Presently, however, the point is reached where the dilute urine, even though greatly increased in amount, does not succeed in carrying off the waste products in sufficient amount and characteristic symptoms of systemic poisoning manifest themselves. That this series of events is in the main due to a gradually developing interstitial nephritis is generally accepted, as proved by abundant pathological demonstration. It is probably true that this polyuria is at first in part functional; but that the disturbance of function gradually tends to bring about organic changes of a sclerotic character, there can be no doubt. Some students of the subject believe that this interstitial change in the kidney is part of a general sclerotic change in the organs and blood vessels of the body, the enlargement of the prostate being only another manifestation of the general condition. This explanation of the phenomena is urged by so great an authority as Professor Guyon. Another belief is, that the condition of the kidney is secondary to the enlargement of the prostate and due directly to the obstruction to the flow of urine. This view is the one held by the writer and by the majority of observers as explaining the causation of interstitial nephritis in these cases. It is plain that when the bladder is tensely filled there is an increase of tension in the kidney. There can be no doubt about this fact, proved by so many cases of distended ureters and hydronephrotic kidneys, due to obstruction in the urethra.

Experimental investigation of the influence of the obstruction in the prostate upon the kidney is not easy, on account of the difficulty of reproducing in an animal the gradually forming obstruction which educates the kidney little by little to perform its functions under a greatly increased tension. Considerable light on this question may, I think, be obtained clinically by the study of our cases with such experimental investigations as are afforded by the surgical procedures properly resorted to for our patients' relief.

For many years, I have treated a certain proportion of these cases by the installment of an in-lying catheter. This method gives us an unusual opportunity for studying the effect of the simple relief of tension. After severe operative procedures on the prostate, there is so much general disturbance of all functions and the operation does so much besides simply relieving the tension that it is difficult to estimate exactly the cause and amount of the subsequent relief. The introduction of drainage by a catheter, on the other hand, inflicts no trauma and produces no decided change in the condition beyond that incident to emptying the bladder. Once empty, the viscus is kept drained. The urine is removed as rapidly as it flows in. The ureters and pelves of the kidneys empty themselves and afterward remain empty. We are justified in believing that the relief of pressure extends even through the uriniferous tubules into the Malpighian bodies and diminishes the tension around the vascular glomeruli. If, now, the relief of this tension in the urinary passages is followed by a resumption or great improvement of function on the part of kidneys partially disabled, we are justified in supposing that the previous interference with the function of these organs was in large part due to the tension and so primarily due to the obstruction that caused it.

It is upon the observation of this course of

events in a considerable number of cases that I base my adherence to the belief that the prostatic condition is in largest degree responsible for the changes in the kidney. Besides the interstitial change in the kidneys of these patients we have also in most of the cases that come into the surgeon's hands an inflammatory condition which has extended from the bladder up the dilated ureters to the pelves and finally to the parenchyma of the kidneys. This is the pyelo-nephritis found almost invariably in the post-mortem examinations of patients who have died of uremia consequent upon obstructive conditions in the prostate. As a rule, the micro-organisms that cause this inflammation are introduced into the bladder by the surgical use of instruments for the relief of retention. This accident is so difficult to avoid in cases requiring constant catheterization that its occurrence brings no just reproach to the surgeon. Practically, every bladder habitually emptied by a catheter is sooner or later infected. Fortunately the valvular opening of the ureter prevents the extension of this inflammation backward to the kidneys in the majority of cases. When, however, the ureters are greatly distended, the orifice in the vesical wall is opened somewhat and extension of the inflammation backward is easy. This condition of active inflammation engrafted upon an interstitial nephritis complicates the clinical picture in a certain degree. Fortunately, however, the pyelo-nephritis is quickly relieved in most cases and it is then possible to watch the gradual change in the urine which marks the slow improvement in the secreting portion of the kidneys.

I do not propose to speak of the methods of establishing catheter drainage further than to say that the plan I have followed is to put a soft catheter into the bladder and to so arrange it that it draws the urine steadily without irritating the vesical walls. It should be fastened so that it stays in place and should be watched so closely as to insure that it shall never stop running for more than a few minutes at a time. This is no new proceeding, but is usually employed for the relief of conditions in the bladder and urethra. I have found no satisfactory account of its effect upon the function of the kidneys.

Langlois and others have noted that enlarged kidneys are reduced by bladder drainage. Langlois says, "It is difficult to know to what this reduction in size is due; whether to the diminution of congestion or to the emptying of a kidney dilated by retention." I would urge, and I hope to show, that the effect of diminishing the pressure in the kidneys is *the most important good* obtained by catheter drainage in these prostatic patients with damaged kidneys. If this is accepted, it is equally clear that all operations which successfully remove prostatic obstruction must owe a large part of the good service that they render to this relief of back pressure and intra-renal tension. For the purposes of this investigation I have taken it for granted that a patient with obstructive disease of the prostate and dilated bladder may be regarded as having some degree of interstitial nephritis if the urine is abundant and of very low specific gravity. If such a patient is suffering from anorexia, nausea and dry mouth, either with or without psychical disturbances, these are to be looked upon as symptoms of uremia due to this interstitial nephritis. If, in addition to these symptoms, he has a high fever and the urine contains pus, it is to be regarded as probable that he has pyelo-nephritis. This supposition is strengthened if one or both kidneys are found to be tender or enlarged. I have found that when efficient drainage is afforded to patients offering the above clinical picture of a pyelo-nephritis, complicated by a preëxisting interstitial nephritis, in the vast majority of cases a very great amelioration or even total disappearance of febrile and uremic symptoms is brought about. It has been my practice to favor diuresis by the administration of large quantities of water. This I have done with the purpose of assisting elimination and also to flush out the kidneys and thus wash out the inflammatory products. If the kidney pelvis is not yet infected, the increased flow of urine running down the ureters without any back current offers conditions unfavorable to the extension of inflammation upwards even if the bladder becomes infected. In some cases, when the constant drainage has been too soon changed for intermittent catheterization, a return of fever and other inflammatory symptoms give evidence that backward extension has again occurred. In such cases I have found that by persisting in the continuous drainage the time has finally been reached when it could be safely dispensed with.

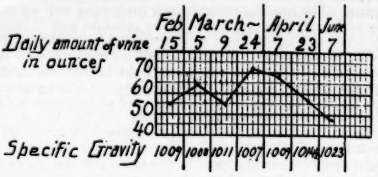
The most reasonable explanation that I can offer for this finally acquired safety for kidneys that have earlier shown a tendency to this retroinfection is that the ureters gradually contract somewhat when the internal pressure is relieved, and also that, the bladder being no longer stretched, its muscular coat recovers its tone and restores the valvular condition at the ureteric orifices; thus giving back to us the physiological barrier that nature normally affords. The first effect on the urinary excretion produced by drainage is a very considerable increase in the amount of urine. In one case the daily amount of urine, which had been eight pints shortly before and had fallen to six pints at the time the drainage was established, rose to sixteen pints shortly after the catheter was tied in. This was an extreme case, but a considerable increase in quantity is noted in all of these patients. I regret that I have no accurate data to show how great an increase of elimination of solids is obtained by this increase in quantity of the urine. That there is a considerable increase is shown first by the fact that the specific gravity does not diminish in proportion as the amount of urine increases and secondly, by the improvement of the patient's condition, which attests a greatly increased elimination. After this first accession of polyuria the quantity of urine gradually falls while the specific gravity rises. The amount of this improvement

differs in different cases. In some patients the quantity of urine and its specific gravity return to within normal limits; in others, while stopping short of this, the restoration reaches a point where the elimination is wholly adequate for the individual. I have one patient, a man of eighty-nine who is seemingly perfectly well and vigorous for his age, who is excreting but little more than one-half the so-called normal amount of urea.

Before proceeding to the detailed report of cases, and in order to avoid misapprehension, I wish to say that I do not regard this method of treating prostatic patients with the in-lying catheter as in any way superseding other operative procedures. It is applicable to very old or very broken patients who are not fit subjects for serious operation, also to patients who will not consent to operation and, finally, it is of great use in preparing patients for some more serious operation. Many of these patients with pyelonephritis and already commencing uremia are not fit subjects for prostatectomy, but by a course of treatment with the in-lying catheter their condition may be so much improved that they will bear, without serious risk, operations which before this preparation would have been almost certainly fatal.

In presenting these cases I have been greatly handicapped by the imperfection of my records. In many instances where frequent examinations gave information as to quantity and constitution of the urine, the written records of these observations have been lost or destroyed. Thus many cases that remain in my memory as striking illustrations of the course of events that I have described cannot be given with the documentary evidence that would make them convincing. It was this experience of my own shortcoming in a set of cases in which I take great interest that inspired the remarks at the beginning of this paper on the importance of our conducting our surgery and recording our observations as if we were engaged in laboratory experiment. All of the cases used in this study were in private practice. Hospital cases are too soon lost sight of to give an adequate idea of the amount of improvement in kidney function. The histories reported have been selected because they present uncomplicated pictures of the condition to which attention is directed. Many other cases have been met in which similar conditions have existed, but in which the presence of stone, of cardiac or of pulmonary disease has caused confusion in the symptoms.

Case I. J. D. L., sixty-seven years of age, was troubled in the autumn of 1897 with frequency of urination which greatly increased over what it had previously been. In December catheterization was commenced. Twelve or thirteen ounces of residual urine. For some weeks catheterization was regularly carried on without untoward effect, but in February Mr. L. suddenly began to have considerable fever, temperature rose to 103° F. and he became seriously ill. I now saw Mr. L. and after twenty-four hours tied in a catheter. The temperature fell quickly to normal. After a week or ten days the catheter was left out, but this was at once followed by a rise in temperature. After further waiting this attempt was repeated with the same result. Mr. L. was now allowed to be up and about with the catheter in place and he began to attend to business, stopping the catheter for intervals of one to two hours. Finally, when the bladder showed itself to be tolerant of this condition, the catheter was left out and he resumed the ordinary condition of a catheter patient passing the instrument once at night and four times in the daytime. At the present time, March 7, 1903, Mr. L. is in excellent general condition and engaging in active business. The accompanying chart is of especial interest. It illustrates the return of renal function in these cases when the internal tension of the kidney is permanently relieved and fairly presents the sort of improvement noted in greater or less degree in all of these patients.



It will be seen that on Feb. 15 and again on March 5, and again on April 23, the quantity of urine was approximately 55 oz. in the twenty-four hours. Observing the specific gravity, it will be seen that whereas on Feb. 15 it was 1009, it had risen on March 5 to 1011 and on April 23 it had risen to 1014. On the 7th of June, when Mr. L. was fully recovered, the quantity of urine was 48 oz. and the specific gravity 1023. The kidneys had thus returned to doing practically normal work.

Case II. W. B. W., old man with long-standing bladder difficulty. Seen Feb. 18, 1898, in consultation with Dr. Webber. Mouth dry, no appetite, much nausea, somnolence a marked feature. In-lying catheter established, followed by immediate improvement and, later, establishment of catheter life. Seen in 1901 and at that time had had no return of renal difficulty. In this case no systematic watch of the urine was kept, but the quick disappearance of pronounced uremia and the restoration of normal renal function made it a striking illustration of the relief that catheter drainage brings to laboring kidneys.

Case III. T. B. D., a frail man of fifty-seven, seen June 18, 1901, with Dr. Underwood of Gardner, Mass. Urinary difficulty for a number of years. Slow, small stream, shutting off at times while passing. For past year strength has been failing. In past six weeks has begun to have stomach symptoms, anorexia, nausea, dry tongue. A few days before, Dr. Underwood, finding the bladder distended to above the umbilicus, passed with some difficulty a small silver catheter and drew two quarts of very pale urine. Since then has had to draw the urine twice a day. The patient's temperature has gradually risen to 101.5° F. At the time of my examination the bladder could be felt reaching nearly to the umbilicus. Neither a soft rubber catheter nor a flexible coudé catheter would enter the bladder. With a long wire stylet a soft rubber catheter was introduced and fastened in place. Thirty-seven ounces of urine of very low specific gravity were withdrawn. Under constant drainage the temperature soon came to normal and remained there; the tongue gradually became moist and clean and the appetite returned. The urine, varying in specific gravity between 1003 and 1005, was secreted in amounts varying somewhat from day to day, but always in the neighborhood of 100 oz. On July 5, 1901, the specific gravity was 1003, the reaction was neutral, there was a large trace of albumen. The sediment was moderate in amount and consisted of pus, many large round cells (prostatic), a few normal blood cells, occasional hyaline casts, many triple phosphate crystals (probably deposited after passing). Mr. D.'s recovery was slow and it was the middle of August before the catheter could be taken out and passed only as occasion required. He returned home and gained 30 pounds in weight within the next five weeks. In December, 1901, he weighed 147 pounds, which he regarded as his full weight. Twice he had an increase of vesical inflammation due to cold and

fatigue. He finds that urotropin quickly clears up the urine when it becomes cloudy. Feb. 3, 1903, he writes that he now weighs 150 pounds and feels well if he does not overdo. July 24, 1903, Dr. Underwood writes that the quantity of urine is from 70 to 90 oz. a day, with a specific gravity of 1006 to 1008. He sees Mr. D. occasionally non-professionally and he looks very well.

CASE IV. I. D. B., a strong man of seventy-two, called upon me Nov. 14, 1900, on account of an annoying incontinence of urine. For several years had had occasional frequency of urination with some discomfort in the act. Two years before, while suffering from bronchitis, had difficulty amounting almost to a stoppage. This passed off, but since then the incontinence had gradually appeared. The bladder could be felt projecting well up into the abdomen after urination. The prostate was of about 1½ times the normal size as determined by rectal touch.

Mr. B. was passing six and a half pints of urine in the twenty-four hours. It was clear, light in color and had a specific gravity of 1003, no sediment. Catheterization was started, the instrument being used at first once a day with antiseptic precautions. From 10 to 12 oz. of urine were drawn at each catheterization. After about a week the catheter was used twice a day and very soon a slight cloud began to appear in the urine and the temperature began to rise. Nov. 26 the catheter was tied in. There was some slight hematuria when the bladder first collapsed, but this did not seriously complicate the drainage and soon cleared up. Nov. 27 the fever reached 103° F. and the patient began to be nauseated and somewhat delirious at night. The cardiac action at this time became so unsatisfactory that Dr. F. C. Shattuck saw Mr. B. and continued to care for the medical treatment for a number of days. Cardiac stimulants and free catharsis were well responded to and two days later the temperature fell to normal. The nausea and slight delirium persisted, however, for some days longer. In this case the cessation of drainage was difficult. When it was tried after a fortnight to leave the catheter out for part of the day, he had a return of vomiting, the temperature rose to 102° F. and the quantity of urine fell from 100 oz. to 65. For four days he had mild uremic symptoms, which slowly cleared up with a return of excretion to a daily amount of over 100 oz. It was not until the seventy-ninth day that the drainage was left off altogether and ordinary regular catheterization was begun. When convalescence was finally accomplished the specific gravity of the urine had risen from 1008 to 1012 to 1015. This patient has been so comfortable with the regular use of the catheter that he shrinks from the consideration of operative measures. Jan. 16, 1903, he was in perfect health and weighed 180 pounds, which is more than for many years.

CASE V. F. B. W., sixty-three years of age. Patient dated his bladder trouble from an attack of the grippe in 1901, although he had had a slight hemorrhage from the bladder the year before. In January, 1902, he consulted Dr. Albert Wood of Worcester, because he was urinating frequently and his abdomen was increasing in size. The bladder was found distended above the umbilicus. Patient was pale, had backache and was very thirsty, with a dry mouth and slight headache. Catheter was passed Jan. 27 and 40 oz. of urine drawn. The urine was pale, slightly muddy. No elevation of temperature. Specific gravity 1008. After this the catheter was passed twice a day and the urine was never fully drawn except the first time. On Jan. 30 I saw him in consultation with Dr. Wood and Dr. Homer Gage. He was thirsty, with a dry mouth and loss of appetite. On the following day the catheter was tied in. At that time the daily amount of urine was from 65 to 80 oz. For three days after the establishment of catheter drainage the urine was tinged with blood, there was a little increase of temperature and the patient was slightly delirious. Gradually, however, his mouth became moist, his mind cleared up and all his symptoms improved. Catheter drainage was continued for three weeks, after which time the catheter was passed at regular intervals. He has steadily improved in health and now obtains by the catheter from 40 to 60 oz. of urine daily. Examination of urine made Feb. 23, 1903, shows the specific gravity to be 1017.

CASE VI. H. S. P. Seen Dec. 27, 1902, with Dr. R. W. Swan and Dr. Albert Wood. A strong, large man of sixty-seven, weighing 230 pounds. Frequent urination for many months, in past fortnight every fifteen minutes. Never stoppage, never hematuria. Has lately had uneasy pain in perineum all of the time, aggravated by passing water, also some pain in lower abdomen. Three days ago his appetite failed him. Has a dry mouth. For a considerable time he has been passing a very greatly increased quantity of water. Some little time ago it was eight pints in the twenty-four hours; in the past week it has fallen to six pints. The urine is clear with a specific gravity of 1005 and contains hyaline and granular casts. The abdomen is very large and hard in the lower segment. The outline of the bladder cannot be made out. Two pints of urine were drawn in the recumbent position and the catheter was then withdrawn, although the flow was still with a good jet. Catheter was later introduced and tied in. Jan. 7, 1903, Dr. Swan reports that patient is eating better. The quantity of urine increased very much on fastening in the catheter, reaching in one day sixteen pints in the twenty-four hours. After the first considerable increase in the quantity of urine, which followed the drainage, the quantity gradually fell to three quarts. The catheter was presently removed and was afterwards passed four times daily, drawing urine to the amount of two quarts in the twenty-four hours. The specific gravity just before drainage was 1005. It rose gradually to 1012 to 1015. Feb. 25, 1903, Dr. Swan reports that the patient says that he feels better than for a year past.

Although it is not intended to enter on any full discussion of catheter drainage here, a few remarks on some of the general bearings of the subject may not be amiss. The introduction of the catheter life in the presence of a tensely distended bladder is a delicate performance. Every one is familiar with the danger of too suddenly emptying such a bladder, and those of us who formerly carried out the plan of cautiously drawing but a part of the urine at each catheterization, or of drawing all of the urine and at once introducing a proper quantity of sterile or mildly antiseptic fluid to restore the partial distension of the bladder, know that even with the greatest care in our antiseptic precautions a cystitis was pretty sure to develop. If this occurred early it was likely to lead to a pyelonephritis which, while often recovered from, led to a fatal issue in a considerable proportion of cases. Since I have learned to apply the drainage of an in-lying catheter to these cases at the outset of the cystitis, I have been able to so modify the course of things that the fear of a fatal result has given way to a feeling of considerable confidence in a favorable issue. I have even finally come to feel that immediate drainage of an over-distended bladder is often better than to make any attempt at intermittent catheterization. By thus at once establishing a constant outflow, we remove all danger of back-flow up the ureters and thus greatly diminish the chances of pyelo-nephritis.

Case VI is a good example of this plan of treatment. In carrying out catheter drainage one important question which arises is, How long shall the drainage be continued and how shall the return to catheter life with intermittent catheterization be safely accomplished? I have made it my habit to continue the catheter drainage until all symptoms have disappeared and the urine has returned to a tolerably normal condi-

tion. If on attempting to leave out the catheter there is a return of fever and the quantity of urine sharply diminishes, it is to be concluded that the ureteric orifices have not yet recovered their valvular condition, and that irritation of the kidneys has again been produced by the back-flow of infected urine from the bladder. Probably the increase of tension plays a part also in producing this renewed evidence of renal irritation. In such a case the drainings should be at once restored and continued, not only till the symptoms of trouble disappear, but for a considerable time longer. Then another attempt may be made, and if the kidneys have shown themselves prone to relapse the change should be made very gradually. Often I have begun by stopping the flow through the catheter for a gradually lengthening period of time each day; and presently I have removed the catheter in the morning, left it out for two or three hours and then reintroduced it and fastened it in place. The next step is to take the catheter out in the morning, simply draw the water in the middle of the day and reintroduce the catheter in the afternoon. In this way, gradually lengthening the intervals as safety allows, I have succeeded in every case and finally returned to the usual catheter life.

It will be seen by referring to my cases that oftentimes the duration of the drainage has been very considerable. Cases I and IV were especially interesting in this regard, for in these patients each attempt to remove the catheter was followed by a return of pyelitis until at last I allowed them to go about freely with the catheter still in place. Mr. L. (Case I) kept the flow shut off for gradually lengthening intervals and attended to his business, going to the office each day. Finally, when the bladder showed complete tolerance for two or three hours at a time, the catheter was left out and the patient has since been well with ordinary intermittent catheterization.

CONCLUSIONS.

First. The relief of tension in kidneys that owing to long obstruction are exhibiting the clinical phenomena of interstitial nephritis usually brings about a return of normal function. From this, it would appear that the renal condition is directly due to the obstruction and increased tension.

Second. It seems probable that in cases of dilated ureters, permitting regurgitation of urine from the bladder back into the pelves of the kidneys, a long drainage of the bladder will permit such a shrinkage of the ureters and ureteral orifices as to restore the normal valvular action of the ureters and the retro-flow of the urine will thus be stopped.

It is reported that at a meeting of the Montreal League for the Prevention of Tuberculosis there was much sentiment in favor of the establishment in the city of a dispensary for tuberculosis.

UNCLEAN MILK, BOVINE TUBERCULOSIS AND THE TUBERCULIN TEST — THEIR RELATION TO THE PUBLIC HEALTH.*

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The dangers at our very doors from the sale of impure milk and from the lax administration of laws enacted to eradicate such dangers, and the incomprehensible complaisance on the part of the public, particularly the medical profession, towards these evils, compel the preparation of this paper. It requires no argument to show that the twenty-story building requires good material if it is to be solid and secure, and yet, judging by their actions, a great many people seem to think that it matters little what kind of material goes into the building of the human structure; they "feed on thorns and expect to pick roses," but later they discover they have sown germs and are reaping ptomaines. The human body is a wonderful laboratory, but it does not prevent the formation of deadly poisons within its very being, once the essential germs are taken into it. Milk has always been an article of man's diet and forms the entire nourishment of the early existence of all animals. Pure milk is the most important article of food entering into daily use, for it contains all the elements necessary for the growth of the young, and because it forms the entire nourishment of children at an age when they are unable to resist any tampering with their food.

"To relieve suffering and to prolong life" is the privilege of the physician, but to *prevent* disease is his *duty*, particularly when efficacious methods of so doing are known to him. The intelligent prevention of disease is one of the most important subjects of the day. The universal progress causes the public to be no longer satisfied that a physician enter a house, prescribe remedies and depart. The public wants to know the nature and origin of the sickness and the most suitable means of preventing its recurrence, and it is our duty to supply this important information. It is a matter of common knowledge that milk is one of the most easily and most universally adulterated of the great food products and to-day the greatest menace to the physical well-being of the American people lies in the uncontrolled sale of adulterated food products. From the importance of the subject and the ease with which milk may be contaminated, great attention has been paid to it, and we have the results of thousands of analyses and a great many investigations to guide us in our studies of the subject. Although the preservation of human health is of the first and highest importance, the perfection of sanitary methods demands that the health of the domesticated animals upon which mankind depends so largely for food and which are kept in such close proximity to the human dwelling should be likewise cared for and protected and, as will be shown

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later, it is in such care of the lower animals that our own health depends in a very great measure.

As this paper, properly, deals only with impure, adulterated, or unclean milk and related conditions I will only speak briefly of pure milk as it should be. No milk should be sold as "whole milk," nor used nor offered as such if it contains more than 88% of watery fluid or less than 12% of total solids, of which 3% should be butter fat.[1] Nor should it contain any pus, mucus, nor any pathogenic germs of any kind; moreover, in my opinion, every drop should be "pasteurized" — that is — immediately after being drawn from the cow it should be aërated, strained and put into suitable bottles which have been previously sterilized, and heated to a temperature of 170° F. for at least fifteen minutes and then rapidly cooled to 45° and kept there until the bottles are delivered unopened to those intending to use the milk. Aëration removes gases which impart the "cow odor" to the milk, and rapid cooling to 45° F. prevents the formation of lactic acid, as the germs of lactic acid are almost inactive below 50° F.[2] Heating the milk to 170° F. for fifteen minutes kills all organisms found in milk, nothing remaining alive but the resistant spores of some bacteria.[3] Freeman[4] found that for the practical purpose of rendering milk safe as an article of food it is not necessary to make repeated heatings, that one heating at 167° F. to 170° F. for fifteen minutes, followed by rapid cooling by immersing the container in cold water, would kill the adult forms of most microbes, and that milk so treated remained unaltered for three days. Under all circumstances I forbid that infants shall be fed upon raw milk, when by the simple procedure of pasteurization we have the means of rendering milk *safe* and more digestible. The pasteurization of milk is an extremely easy operation, and if mothers better appreciated the dangers to which their little ones are exposed from the use of raw milk from unknown sources, especially in the summer time when it may be teeming with bacterial growth, more of them would use this simple precaution. It is estimated that one third of all children die before they are three years old, and one of the leading causes of infant mortality is unwholesome milk. Bad milk cannot be made perfect by pasteurization, but the danger from its consumption can be lessened. The process is very simple and the necessary apparatus is inexpensive.

Experiments carried out by the Maryland Experiment Station of the Bureau of Animal Industry show that there is very little difference in the digestibility between raw and pasteuriezd milk, while the latter is much the safer.[5] Milk which is from cows who are diseased in any way, or to which has been added any of the following commonly used adulterants, viz., annato, termeric, coal-tar colors, starch, salt, cane-sugar, glycerine, syrup, boric acid, salicylic acid, borax, formaldehyde, benzoic acid, sodium carbonate or chalk,[6] should not be sold as "pure whole milk," and infractions of this rule should be firmly dealt with and prosecuted according to the laws already on our statute books. Although, fortunately, the milk secretion is in abeyance during many diseases to which cattle are subject, it is not so in all, nor in every case of the same disease, and in a few conditions the milk presents somewhat definite chemical and microscopic characteristics which are fairly constant to the unaided eye, nose and palate; however, milk ordinarily is all that is to be desired. These adulterants are all used by sellers and producers of milk and may be easily detected by the appropriate chemical procedures described in technical works. To ascertain the bacteriologic and microscopic conditions of milk, however, it is necessary to have recourse to somewhat complicated laboratory processes, which, familiar to most of us, are quite mysterious to the uninitiated. The discoveries made in laboratories have worked great changes in professional opinion and at the same time have lengthened the span of life and introduced the miraculous into modern science, for the apparently impossible of yesterday is not only the possible but the common thing of to-day.[7] The use of coloring matter in milk or cream, although greatly improving its appearance, has been shown by recent investigation to seriously interfere with the pancreatic and peptic digestions.[8] As for the alleged harmlessness of formaldehyde, it is only necessary to refer to the death of the brilliant young pathologist Straub of Munich, whose death is directly attributed to his working in the gas.[9]

Young states that formaldeyhde added to milk as a preservative impairs the nutritive value of the milk and interferes with the digestive processes.[10] The people of Omaha, Neb., were afflicted with a milk supply so altered by the addition of preservatives that the sanitary authorities warned the citizens of the great danger of feeding infants with the milk.[11] Annett shows from experiments that the use of boric acid and formalin as milk preservatives are very injurious to the health of the consumer and particularly so to the health of infants.[12] He states his belief that the great infant mortality rate from "diarrhea" of many large towns may be closely connected with the almost universal practice, particularly during the summer months, of systematically "doctoring" the milk by means of preservatives, by milk dealers, etc. He intends carrying on further experiments to obtain facts for furthering the prosecution of such offenders against public health. As the dairy industry has always been one of the most slovenly conducted branches of food production, it is with the utmost difficulty that those who are engaged in it can be induced to understand or appreciate the value of modern cleanly methods, while the additional labor required will make the profits shrink to an alarming extent. Although our sanitary laws, when and where they are enforced, have improved the quality of milk, particularly as to its chemic composition, only a bare beginning has been made in regard to making certain that the supply is *pure and healthful*. Chemic altera-

tions are due to criminal tampering on the part of the dealer, while bacterial alterations and diseased conditions are due to ignorance or neglect which are almost criminal.

Lestes [13] gives the results of his investigations of milk and says that milk that contains pus, mucus, or germs is utterly unfit for human use, but that these restrictions would entail the condemnation of 80% of the samples he examined. No farmer dreams of allowing a cow with an inflamed udder to suckle a calf, so why should he be allowed to sell such contaminated milk? Lestes also shows the folly of mixing the milk from healthy and diseased cows. Lemiere [14] states that the death rate of Lille, France, under two years is 398.6 per 1,000, and in one parish 520. Gastro-enteritis is responsible for a very large proportion of these deaths and the author truly remarks that this is preventable in a great measure by insuring a pure milk supply. The difficulty of a general correction of the faulty methods of milk production and the adoption of improvements are mainly due to the increased cost of the milk production and the consequent higher price to the consumer. And if the state should undertake to at once enforce these changes, the business of the dairyman would be temporarily ruined. The farmer cries out in alarm where the "tuberculin test" is proposed and when the worst cases are to be rectified at once a great cry of sympathy goes up that some one is being persecuted and the press of the country is filled with the jargon of vote-seeking politicians who, while seeking the favor of the cities, will not do anything to incur the displeasure of their farmer, dairymen or cattle-breeding constituents. At a meeting of the farmers, dairymen and the Illinois State Board of Agriculture held in Chicago, in 1899, an organization was formed for the purpose of protesting against the enforcement and advocating the repeal of the stringent laws passed by the legislature relative to the eradication of tuberculosis in cattle. Great dissatisfaction is expressed among farmers of this state over the compulsory killing of cattle for tuberculosis. "At a recent examination on the dairy farm of W. G. Thornton by State Veterinarian Lovejoy and Live Stock Commissioner Johnson [15] eight cows of a herd of twenty showed signs of tuberculosis. The state board slaughtered them in the presence of several hundred people. Four of the cows were found free of the disease, while the other four cows were only slightly infected. Dairyman Thornton has retained lawyers and will prosecute the case." I will undertake to show that the tuberculin test, if correctly and intelligently applied, is most infallible in the diagnosis of bovine tuberculosis, and I doubt very much that "four out of eight" reacting cows were free from the disease.

Secretary Wilson of the Department of Agriculture, in an interview published in the Chicago papers in 1899, is said to have remarked that "he feared that Governor Tanner's proclamation relating to the importation of cattle was too drastic." He did not approve the slaughter of cattle suspected of tubercular infection unless the case developed *indisputable* symptoms of the disease. He sincerely hoped that the State Board of Health would not permit the indiscriminate slaughter of cattle suspected of tuberculosis, to the detriment of the dairy interests of the country. Secretary Wilson's cautionary advice is worth careful consideration, but I would like to ask what are the *indisputable symptoms* of tuberculosis? There seems to be some difficulty among scientific minds as to this question. Legislation cannot make honest men of dishonest men, and ill-directed legislation is often worse than none, but the annual sacrifice of thousands of innocent young lives upon the altar of impure milk and public sentiment will sanction *any* destruction of cattle necessary to the eradication of tuberculosis. So let us shed a little light upon this dark subject where "ignorance seems to reign supreme." It requires the strong hands of law and justice to deal with it and I demand to know if any consideration of money or politics can be permitted to weigh against a possible danger to the lives of our children.

Emmet Holt [16] points out that the most important preventative measures in the treatment of "summer diarrhea" of infants comprise careful inspection of milk sold in cities and close supervision of those selling milk and the sterilization of all milk sold. Lübbert has shown [17] that milk as it usually comes from the dairies contains bacteria which have the power of peptonizing it and as this process of peptonizing goes on the milk often becomes very poisonous, especially to individuals under two years of age, and may bring about a fatal enterocolitis or "summer complaint." Hirsh,[18] Sibman,[19] Spiegalberg,[20] Monti [21] and Escherich [22] have all lately contributed to our knowledge of the flora of the gastro-intestinal tract. Their observations agree and point to the streptococcus enteritis as the etiological factor in the acute diarrheas of infants where the stools are frequent and slimy. They also agree that these organisms find their way into the child's intestines through milk and that these identical micrococci have been recently isolated from cow's milk. Eastes writes as follows [23]: "I have also not the slightest doubt that unboiled milk containing streptococci is also to be held responsible for some of the cases of infantile diarrhea and mortality." Holst [24] observed a series of cases of acute gastric catarrh which he attributed to the ingestion of milk containing streptococci. He reports cases of gastric disturbance in four families, apparently caused by raw milk, for only those members of the families that partook of the raw milk were affected. In each instance he found that the patients had partaken of milk from cows suffering from inflammation of the udder. Niven [25] reports extensive poisoning among the patrons of a single milk dealer. The patients suffered from "diarrhea, sickness and abdominal pain," and only those persons who had partaken of the milk were seized. A bacteriologic examination revealed the presence of *bacillus coli communis* and strep-

tococci. It was ascertained that one of the cows in the dairy supplying the milk had been suffer- from garget for some time, and on the day when the milk which caused the sickness was produced, the inflammation of the udder of that cow was most marked. While the author considers streptococci to be the cause of the trouble, yet he does not present conclusive evidence in support of that belief. Stokes [26] writes: "The prevalence of the acute intestinal disorders among children using cow's milk is well known and many of these conditions are caused by the organisms of suppuration. It would seem, therefore, that milk from diseased cows, containing these germs, might often be the cause of intestinal troubles, especially in young infants. Busey and Kober [27] hold similar views based upon the authority of Kruger,[28] Bang [29] and others. Bergey [30] observed sickness in an infant fed on milk from a first-class dairy and an examination revealed the presence of streptococci in the milk. "This result led to the employment of milk from other first-class dairies and the examination of each yielded the same results, viz., the presence of large numbers of streptococci."

Nothing definite can, as yet, be stated with regard to the significance of the presence of streptococci in the milk of healthy cows. Beck [31] believes that they are closely related with the streptococci which Escherich found in infantile enteritis. Hirsch [32] has described in minute detail the progress of a fatal case of gastro-enteritis in an infant, in which streptococci was the etiologic agent. He found the organism like *streptococcus involutus*, described by Kurth, and found it to be pathogenic to white mice only. Libman,[33] Tavel and Eguet [34] and DeCerenville [35] have made similar observations. Heath[36] of Buffalo suggests the following as being worthy of being incorporated to fortify existing laws relating to the milk industry:

(1) Prohibition of sale of milk over thirty-six to forty-eight hours old. (2) Prohibition of disinfectants. Milk-house conditions must preclude their necessity. (3) Supervision of contagious diseases as to milk routes. (4) Abolition of street peddling and grocery store dealers. (5) Sterilization at dairy and preparation for ultimate delivery with labels of data. (6) Arbitrary attitude towards dairies supplying cities and over which no jurisdiction exists.

Pierson,[37] Assistant Chief Dairy Division, Department of Agriculture, gives the following as the ordinary conditions that should be found in every well-managed dairy:

(1) A roomy, clean, dry, light and well-ventilated cow stable. This is absolutely necessary to keep cows in the best of health. (2) Healthy and clean cows which appear well fed and contented. (3) Abundance of pure water given to the cows at least twice daily. (4) Feed of good quantity. The food must be free from dirt, decay or a musty condition. (5) A spirit of kindness towards the stock by every one employed about them. (6) Provision for aërating, straining and cooling the milk, in a clean atmosphere free from all stable odors, immediately after being drawn from the cow. (7) Provision for washing and sterilizing all utensils which come in contact with the milk. (8) Facilities for storing the milk and keeping it cold.

To show that these are not simply theoretical and visionary possibilities, the brilliant example of the Royal Danish Veterinary School in reference to the milk supplied to the city of Copenhagen may be cited. At no other place are modern methods in such general use nor are they controlled with such efficiency. In this country New York, Massachusetts, Pennsylvania, Iowa and Minnesota have legislated along these lines, but in all of the laws there is the defect of too much of the feature of money, "protection to the farmer." In our own immediate neighborhood several instances of voluntary improvement have demonstrated that even with the increased cost of production and increased selling price there is still a good chance of success and that in the end the intelligent consumer will appreciate the honest efforts expended in his behalf. Such examples as the work of Dr. Russell of the Wisconsin Experiment Station in supplying milk to Madison and Milwaukee and his development of pasteurized milk for infants and invalids, the work of Gurler of DeKalb, of the Clover Hill Farm, and the Walker-Gordon Laboratory in supplying milk to Chicago, are worthy of the highest commendation. Reviewing these demonstrations, any doubt as to the possibility of supplying cities with milk of a high standard of quality and purity for general distribution must be removed and these examples should be emulated by every dairyman in the business.

To show what may be accomplished by systematic inspection and prosecution, the example of the Department of Health of Chicago may be cited: In August, 1895,[38] the authorities issued instructions ordering the entire force of the municipal laboratory to bend every energy towards improving the milk supply and to vigorously prosecute all dealers selling milk or cream not in accordance with the city ordinance. The number of samples collected and analyzed was at once increased and the prosecution of offenders reduced the number of samples below grade from 60% of all samples collected to 5% in a few weeks. Over 14,000 samples were examined in 1895 and over 25,000 in 1896. Vigorous prosecution and publication of the names of dealers has shown its effect not only on the dealers themselves but on the farmers who supply them. In cases where the milk has been found wanting in any particular, the dealer has stopped taking milk from this farmer and thus the farmer has been forced to supply good milk. It has been repeatedly held in courts that shippers of milk below grade cannot recover in a suit for payment. Every analysis of milk made represents a sanitary inspection of the premises where the sample was taken as well as an examination into the quality of the milk. Moreover, special sanitary inspec-

tions are made whenever the circumstances seem to warrant. I have visited many dairies in the immediate vicinity of the city of Joliet, Ill., but I have yet to find one where proper and adequate hygienic sanitary measures are carried out, and I have yet to find one where there are not abundant avenues for infecting the milk. In almost every quart of milk sold in that city, after standing, a sediment collects which upon macroscopic examination appears to be dirt and microscopic examination and culture experiments prove to be teeming with germs. I have observed this not once but many times and I submit that this is not the kind of food for our babies, our aged and infirm or sick. Are we to allow such conditions to go on unprotested? Or is it not rather our duty to issue a warning to the public and to call things by their right names — to point out in unmistakable terms the enormous danger to public health that arises from mistaken ideas of cleanliness, and the slaughter of innocents caused by the idiotic methods employed in our milk production.

Recently I made some cultural experiments with milk sold in the city of Joliet, and I give you the results according to notes made at the time. The technique of these bacteriologic investigations was carried out in the simplest manner, to test the milk for the presence of germs of the "typhi-colon group" as well as other pathogenic forms. Beyond the colon group, just mentioned, no particular efforts at the identification of separate species were made — that being left for the future. Samples of milk, averaging one pint each, were purchased in the open market from the various dairies supplying milk to the residents of this city, from cows tested with tuberculin and those not so tested. These samples were put into pails provided for that purpose and which had been subjected to steam sterilization. The milk was at once carried to the laboratory and put into tall sedimenting glasses which had also been steam sterilized and allowed to stand for twelve to eighteen hours, being kept at a temperature ranging from 45° to 50° F. during this time. Then 10 cc. of milk were drawn into a sterile pipette and placed in the tube of the centrifuge, which was then whirled at a speed of 3,000 revolutions for five minutes. After the bulk of the milk had been poured off, a small portion of the sediment remaining in the bottom of the tube was taken up with the platinum loop and used to inoculate tubes of sterile glucose gelatin, which were at once put into the incubator and kept at 70° F. for periods varying from one to four weeks. Positive reactions were obtained in nearly every example. Second, and in some cases third, inoculations from the original gelatin cultures were grown in glucose-glycerine agar, on slants, in stabs and in plates. These agar tubes and plates were kept in the incubator at a temperature of 35° to 40° C., and in forty-eight hours showed numerous colonies which continued their growth in such exuberance that in a few days the surfaces of the media were entirely covered. Cover slips prepared from these cultures showed germs with the same morphologic characteristics as the direct smears from the milk. Control tubes of uninoculated media which were always opened with the inoculated tubes and in every way subjected to the same manipulations and conditions have remained absolutely sterile — consequently we can attribute the positive results produced in the samples to the presence of undesirable constituents in the milk examined. Litmus agar slants were prepared from the colonies of the third generation growing upon litmus agar and an acid reaction was shown in twenty-four hours, continuing, with the formation of gas cavities, until in from three to four days the media had entirely changed from blue to red. Glucose bouillon inoculated with these cultures and put in the fermentation tube rapidly developed gas which was easily identified as H and CO_2.

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(*To be continued.*)

Clinical Department.

A CASE OF MYXEDEMA.

BY ADDISON S. THAYER, M.D., PORTLAND, ME.

This patient was first seen by me Oct. 21, 1902. A severe nosebleed caused hurried search for a doctor, at a time when doctors were making their afternoon calls. An orthopedic surgeon, Dr. E. G. Abbott, after telephoning to several general practitioners, kindly responded in person, plugged the posterior nares, and transferred the case to me.

The classical symptoms of myxedema had been present for years — some symptoms for more

than twelve years. There was waxy pallor of the skin, bagginess of subcutaneous tissues, falling out of hair, constant lachrymation, hemorrhages from mucous membranes, subjective and objective deficiency of body heat, and slowness in thought, speech and motion.

The stumbling gait and its consequences seem especially worthy of note. As the patient herself afterwards expressed it, "I could not get my foot forward fast enough to prevent stumbling, and I could not get my hands in front of me in season to break the fall and save my face from bruises."

This patient is, perhaps, uncommonly susceptible to thyroid medication, which began the same evening. At no time has she been able to take in a single day more than two of Parke, Davis & Co.'s thyroid tablets without intracranial pressure, "nervousness," or tachycardia. After two weeks the dose was reduced to one tablet daily; after three months, to one-half tablet, once daily, — at which time all of the above symptoms had almost wholly disappeared.

The accompanying photograph was taken two weeks after the beginning of treatment, when there was already a noticeable improvement in appearance. The fall which caused the nose-bleed had caused also bruises and distortion of feature; and it was necessary to wait for these swellings to subside, in order that the picture should present no abnormalities except the residue of myxedema.

A CASE OF EPILEPSY AND NEPHRITIS SIMULATING PUERPERAL ECLAMPSIA.

BY PHILIP H. COOK, M.D., WORCESTER, MASS.,

House Obstetrician, City Hospital.

M. H., aged thirty-four, of American birth and parentage, IV-para, entered the Worcester City Hospital on Aug. 13, 1903, at 10.30 P.M., well advanced in first stage labor and was admitted to the Maternity Ward on the service of Dr. Foster H. Cary. Friends who came with her stated that she was of a nervous disposition and subject to epileptic seizures, the last of which had occurred about one month ago. Preceding labors were normal. Last one was six years ago. No particulars of attacks were obtainable. Patient stated that she was about nine months pregnant. Had felt well throughout pregnancy, aside from the convulsion one month since. No headache, nausea and vomiting, or epigastric pain. Said eyes had not troubled her.

On physical examination, pulse 108, good volume and tension. Tongue shows old scars. Heart negative. Marked edema of legs and feet, none of face or hands. Skin moist. Catheterized specimen of urine was pale in color. Nitric acid test showed it to be laden with albumen.

Labor progressed normally and child was born at 12.43 A.M., Aug. 14. Pulse 80 after birth of placenta. Patient soon went to sleep and passed a good night. At 9.50 A.M., Aug. 14, patient asked to have curtain lowered, as light hurt her eyes. Twenty minutes later the nurse's attention was attracted by a sound "like filing a saw," and going into the room she found patient in a convulsion. The head moved quickly from side to side, the eyes rolled and there was frothing at the mouth, without, however, any admixture of blood. The arms were rapidly flexed and extended, while the thumbs were closely flexed across the palms. The jaws were clenched and the teeth gritted continually. The whole body quivered and tossed from side to side. A gag was inserted and a few whiffs of ether given during the convulsion, which lasted about two minutes. The patient now passed into a semi-comatose condition, responding to supra-orbital pressure. Pulse just after the convulsion was 100, good volume and tension. Temperature normal. Respiration noisy and stertorous in character. Skin moist. A hot pack was ordered, to be continued for half an hour. Before the end of this time the patient had recovered consciousness and was talking rationally. She had no recollection of anything which had occurred during the attack. Shortly after recovering she complained of headache and restlessness, which yielded readily to treatment. Milk diet and diuresis were ordered and the pulse taken every twenty minutes through the day. It never rose above 84 and reached that point only twice. During the afternoon considerable edema of the lower lids was noted.

Urinalysis showed: Albumin ¼%+, sugar, 0; color, pale; specific gravity, 1010; reaction, acid; bile, 0.

Sediment: Many hyalin and fine granular casts, considerable squamous and large round epithelium. Rare normal corpuscle, leucocyte and small round cell.

Late in the afternoon the patient's husband called and from him the following facts were obtained. She had been subject to attacks for fifteen years and treated by several physicians without benefit. No aura till two years ago, since when the seizures have been preceded a few minutes by dimness of vision. Following this comes convulsion lasting a few minutes, then stupor lasting about half an hour. Has injured herself during convulsions. Attacks sometimes only twice a year, but have come as often as once in two weeks. The children, the last of whom was born six years ago, are all well, but inclined to be nervous.

The patient now began a perfectly normal convalescence. Her temperature never exceeded 98.6, nor her pulse 90. A urine chart was kept for three days, with results as follows: Aug. 14, 79 oz., urea, 231 gr., albumin ¼%+; Aug. 15, 81 oz., albumin trace; Aug. 16, 84 oz., urea 252 gr., albumin trace. Sediment as before.

On Aug. 24 albumin was reported as slight trace. Sediment. Some pus and blood, no casts seen. Edema had nearly disappeared. Patient was now allowed an increase in diet. At 10 P.M. she had an attack similiar in every respect to the first one, but preceded by a shrill cry.

A gag was inserted, and full consciousness returned in about twenty minutes. Pulse 88, temperature 98.4. From this time on the convalescence was uneventful. The child, which on account of the mother's tendency it was thought unwise to put to the breast, did well on modified milk and on Aug. 27 both patients were discharged well.

Medical Progress.

In general the pursuit of any one-sided diet can lead to the formation of renal calculi particularly if combined with irregularities in drinking. Exclusive meat eaters acquire uric acid calculi, vegetarians oxalic or phosphatic stones. Health lies in a mixed diet. Highly spiced and salted food favor hyperacidity of the stomach and this is harmful in many ways to those disposed to renal stones. The salt of the food goes directly over into the urine, increasing its specific gravity.

The constituents of the stone should be determined. This is far more easily done than sup-

THAYER. A CASE OF MYXEDEMA.





and at regular intervals so that the quantity of urine shall be 1,500 to 2,000 cc. in twenty-four hours. To attain this 2,500 cc. of liquid must be taken in the day, which means 500 cc. (1 pint) at each meal and about the same quantity between meals and before retiring. Water is the best liquid. Klemperer gives a diet table illustrative of this idea and says that patients who pass 250 cc. bright, clear urine every three or four hours during the day can be assured that they are protected from the formation of new calculi.

[1] Klemperer: Die Therapie der Gegenwart, Sept., 1903.

urine is, the more uric acid can it hold in solution. Over this colloidal property, diet exerts no influence, consequently all energies must be directed toward changing as much of this free acid as possible into combination with a base, sodium acid urate, which is reasonably soluble at body temperature. Acid can exert a great influence in this direction, because a meat diet furnishes acid elements to the urine, a vegetable diet furnishes alkalies. With a preponderance of meat diet and little vegetable food the free uric acid in the urine reaches 80 to 90%, while on a mixed diet the rela-

[2] See Hall: Berl. klin. Woch., 1903, Sept. 21, p. 868.

than twelve years. There was waxy pallor of the skin, bagginess of subcutaneous tissues, falling out of hair, constant lachrymation, hemorrhages from mucous membranes, subjective and objective deficiency of body heat, and slowness in thought, speech and motion.

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Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

THE TREATMENT OF RENAL CALCULI.

Prophylaxis. — Each stone consists of a crystalline and organic element. The organic element becomes visible when the crystal is carefully dissolved. This ground substance has not been isolated, but the micro-chemical reactions suggest an albuminous substance and Klemperer[1] thinks it the mucin which is present in all normal urines. This is of the greatest importance in prophylaxis, because formerly it was supposed that a catarrh of the mucous membrane must be present before a stone could form and this lithogenous catarrh eluded treatment. Now it is recognized that a calculus can always form, if crystals are precipitated in the urinary passages, and the first aim therefore of prophylactic treatment is to prevent this precipitation. But as neither one nor several crystals form a calculus unless they adhere, the second task of prophylaxis is to remove these smallest aggregations of crystals. This second task is simpler and the same no matter the form of crystal. It is purely mechanical.

A renal calculus will never form if there is a copious flow of fluid through the urinary passages. Crystals are more readily precipitated from a concentrated solution and less thoroughly washed along. Consequently calculi are found in heart disease, in the first few months of life, after acute illnesses, but they are rare in diabetes mellitus unless as a result of energetic treatment, and never found in diabetes insipidus. Women drink notoriously too little fluid, men do not err so much in this direction, but they drink irregularly through the day. One portion of urine will be concentrated, another dilute. The first rule then is that liquids shall be taken freely and at regular intervals so that the quantity of urine shall be 1,500 to 2,000 cc. in twenty-four hours. To attain this 2,500 cc. of liquid must be taken in the day, which means 500 cc. (1 pint) at each meal and about the same quantity between meals and before retiring. Water is the best liquid. Klemperer gives a diet table illustrative of this idea and says that patients who pass 250 cc. bright, clear urine every three or four hours during the day can be assured that they are protected from the formation of new calculi.

[1] Klemperer: Die Therapie der Gegenwart, Sept., 1903.

In general the pursuit of any one-sided diet can lead to the formation of renal calculi particularly if combined with irregularities in drinking. Exclusive meat eaters acquire uric acid calculi, vegetarians oxalic or phosphatic stones. Health lies in a mixed diet. Highly spiced and salted food favor hyperacidity of the stomach and this is harmful in many ways to those disposed to renal stones. The salt of the food goes directly over into the urine, increasing its specific gravity.

The constituents of the stone should be determined. This is far more easily done than supposed, and is summarized in Klemperer's article, but cannot be considered in this review. Having determined the character of the stone, a diet should be planned which takes into consideration the character of food which leads (1) to the formation of the particular stone and (2) influences the solubility of the substances forming the stone.

DIETETIC PROPHYLAXIS AGAINST URIC ACID CALCULI.

The uric acid of the urine comes from the nucleo-proteids which form the essential constituent of the nucleus of the cell. A meat diet therefore favors uric acid, particularly the cellular organs like thymus, liver, kidney, but a milk and egg diet with farinaceous dishes and vegetables[2] causes no uric acid. In general 1 pound of meat produces in twenty-four hours 1.5 gm. uric acid, 1 pound thymus 2 to 3 gm. On a milk and vegetable diet the uric acid falls to 0.4 to 0.6 gm. per day. It never wholly is absent, because cells are constantly breaking up in the body. One half pound meat is a proper quantity to allow and it makes no difference whether it is white or red (light or dark). Fish can be reckoned as meat. Bouillon need not be forbidden since the extractives which it contains increase unessentially the quantity of uric acid. (This is contrary to the usual belief.)

The second and more important question is how to hold in solution so insoluble a substance as uric acid. The uric acid exists in the urine as an easily soluble salt and as an acid which is very insoluble. Only a small part of the latter is really soluble, the greater part being held in a sort of suspension from which by shaking alone it may be precipitated. The urine holds the uric acid in suspension by reason of the colloidal property which is furnished by the normal coloring matter, urochrome. The darker colored a urine is, the more uric acid can it hold in solution. Over this colloidal property, diet exerts no influence, consequently all energies must be directed toward changing as much of this free acid as possible into combination with a base, sodium acid urate, which is reasonably soluble at body temperature. Acid can exert a great influence in this direction, because a meat diet furnishes acid elements to the urine, a vegetable diet furnishes alkalies. With a preponderance of meat diet and little vegetable food the free uric acid in the urine reaches 80 to 90%, while on a mixed diet the rela-

[2] See Hall: Berl. klin. Woch., 1903, Sept. 21, p. 868.

tion between free and dissolved uric acid is about half and half. By an increase of vegetable food the uric acid appears more and more as a salt and is so excreted. If vegetable food is persisted in to the exclusion of other food the urine finally becomes alkaline from calcium phosphate. Practically it is sufficient if the two forms of uric acid are excreted half and half. This is accomplished when large quantities of fruit and vegetables are eaten with moderate quantities of meat, fish and leguminous vegetables. A plateful of vegetables should be taken twice daily and at least a pound of fruit.

The uric acid will be excreted as a salt, when the diet is of a mixed character containing a moderate quantity of meat, if 1 gm. (15 gr.) bicarbonate of soda is given five times daily. The more meat, fish and leguminous vegetables given, the more soda required. The soda is administered to best advantage three or four hours after a meal. It is not required just after a meal, because at that time the acid elements of the blood are being used to form HCl in the stomach. Klemperer suggests giving bicarbonate of soda in the form of a natural mineral water. The CO_2 contained in such also tends to favor the solubility of the uric acid. The necessary quantity of soda bicarbonate to be given can be determined by the reaction of the urine. Any one can convince himself of the effect of a meat or vegetable diet upon the reaction of the urine by living upon one or the other exclusively for a few days and then testing the urine with litmus paper.

[We have not as yet sufficient data to say positively in what condition the uric acid exists in the urine, but at the body temperature there is no reason to believe that uric acid is not all present in the form of a salt. When urine cools and some uric acid crystals form there is a change from the form of a salt to the form of a free acid.

Urochrome has not been satisfactorily proven to hold uric acid in a colloidal condition. Klemperer performed one experiment in which he found that the uric acid was precipitated a little more slowly from a solution of sodium urate, to which uric acid had been added, in the presence of urochrome than in its absence.

The administration of alkalies in the food or the addition of alkalies to a urine cannot influence the solvent power of the urine for uric acid unless enough alkali is given to make the urine actually alkaline. This is true as well of lysidin, piperazin and the other organic bases as of sodium bicarbonate and lithium salts. This should be expected from theoretical reasons and has been shown to be true by experiment.

In an article published by Klemperer in Vol. 5, p. 48, of the *Zeit. für physik. u. diätet. Therapie*, he states that carbonic acid decreases the solubility of uric acid but increases the solubility of the acid urates of sodium and potassium.

We would refer to an article recently published in this JOURNAL by McCrudden, 1903, Aug. 6, p. 149, for a further discussion of this subject. — E. P. J.]

THE PROPHYLAXIS OF OXALIC ACID CALCULI.

The calcic oxalate of the urine is chiefly derived from the food. Considerable quantities occur in spinach, tea, cocoa and smaller amounts in the remaining vegetables, fruit and beer. Meat is poor in oxalic acid except for the connective tissue elements. Oxalic acid occurs most as the insoluble calcium salt in the food, but is set free by the hydrochloric acid of the stomach. The more acid the gastric juice, the more oxalic acid is set free to find its way into the urine. Therefore by the avoidance of spinach, tea, cocoa and the gristle of meat and by the use of an alkali with meals the urine will contain little oxalic acid. It does not become wholly free from it, because of endogenous sources like creatinin and glycocholic acid.

The solubility of oxalic acid is increased in the presence of acid sodium phosphate, but as this is produced through the agency of an excessive meat diet, this method is impracticable. A more favorable resource is open. Calcium oxalate is more readily soluble in solutions of magnesium salts than of calcium salts. The former then are desirable and preponderate in meat, leguminous and farinaceous foods, potatoes and apples, while the latter, the calcium salts, are relatively abundant in milk, eggs and fresh vegetables.

DIETETIC PROPHYLAXIS OF PHOSPHATIC CALCULI.

Calcium phosphate is precipitated in an alkaline urine. This occurs when the urea is broken up by bacterial invasion into carbonic acid and ammonia. This condition is best met by treating the primary condition by lavage of the urinary tract, etc. But the urine is often alkaline because of fixed alkalies, instead of the volatile ammonia. This often occurs coincidently with the secretion of HCl in the stomach and is a normal occurrence, a few hours later the urine returning to an acid reaction. If the gastric juice is removed by vomiting or by washing out the stomach, the urine remains persistently alkaline.

Prophylaxis consists in restoring the general bodily condition to a healthy plane and treating the digestive disturbance. A mixed diet is to be preferred, since experience shows the complete avoidance of vegetables is unavailing. Vegetables and fruit, however, should be taken only in moderate quantities and alkaline waters totally interdicted. Plain water or water charged with carbonic acid is advisable since this passes to a considerable extent into the urine and by increasing the number of acid molecules contributes to the solution of the phosphates.

VEGETABLE FOOD IN GOUT AND NEPHRITIS.

Hall contributes an interesting article upon this subject.[3] It has been the custom to restrict meat as much as possible in gout and nephritis. Formerly it was supposed that white meat was less harmful, but recent investigations have shown that the difference in the content of ex-

[3] Berl. klin. Woch., 1903, Sept. 21, p. 868.

tractives between white meat and red meat is slight. Though much attention has been devoted to the study of the purin derivatives in meat and to their exclusion from the diet, vegetables have been allowed freely and without distinction. How irrational such a course is the following table shows:

Food.	*Purin Nitrogen in per cent of undried food.*
White bread, rice, tapioca, cabbage, cauliflower, lettuce	0.
Potatoes	0.0007
Onions	0.0036
Asparagus, cooked	0.0086
Pea meal	0.0156
Oatmeal	0.0212
Beans	0.0250

From this table it is obvious that though white bread, rice, lettuce and potatoes are wholly or nearly free from purin bases and so belong in a purin-free diet, other vegetables like onions, asparagus, beans and pea meal and oatmeal contain an abundance of extractives. This fact explains an observation of V. Nooden, who obtained about the same quantity of uric acid when a patient was fed with asparagus, beans and sauerkraut as he did when the patient was on an ordinary diet. Douglas also found 0.702 gm. uric acid in the urine of twenty-four hours from a patient whose diet was rich in peas, beans and lentils and only 0.675 gm. uric acid when the same patient was on the customary meat diet. Hall found in three individuals living on a diet free from extractives that the addition of beans caused an increase of uric acid in the same way as meat. The increase in extractives amounted to half the quantity of the extractives contained in the beans given.

The following table shows that various forms of beer contain many purin derivatives:

Substance.	*Purin Nitrogen in per cent.*
Claret, Volnay, Sherry and Port wines	0.
Milk	0.0002
Lager beer (A)	0.0052
(B)	0.0020
Pale ale	0.0058
Porter	0.0061

There is about the same quantity of uric acid forming material in one quart of beer as in three and one third ounces of beef. It is still an open question whether purin bodies in the food exert an influence on the development and course of gout and nephritis, but the close relation between these bodies in the food and the formation of uric acid is no longer uncertain. At present the dietetic treatment of these affections will only follow rational lines when besides meat, the vegetable foods such as peas, beans, onions, asparagus and oatmeal are restricted and beer absolutely forbidden.

TOXIC SYMPTOMS FROM UROTROPINE.

Urotropine is so extensively used that it is well to bear in mind that it is not harmless. Coleman [4] states that toxic symptoms like strangury occur with comparative frequency if the urotropine is not properly diluted. The susceptibility of individuals varies so much that the drug should be constantly controlled by examination of the urine. Signs of renal irritation, frequent and painful micturition, hematuria, hemoglobinuria, irritation of the stomach and bowels, headache, tinnitus aurium all may occur. Withdrawal of the drug is soon followed by a disappearance of symptoms.

FORMALIN INHALATION IN PULMONARY TUBERCULOSIS.

Spengler [5] advises formalin inhalations in pulmonary tuberculosis and fetid bronchitis. He prepares a solution containing ether 75 cc., absolute alcohol, 20 cc.; formalin, 5 cc. Ten drops of this are placed in a tumbler and about ten or twelve inspirations taken, the mouth being removed from the glass for expiration. The first inspirations should be superficial, the latter ones deep. The inhalations are made every other day at bedtime, and intermitted after a fortnight, to be resumed in a few days and continued as before.

TOXIC SYMPTOMS FROM ASPIRIN.

Dr. Franke [6] recounts his experience on taking 1 gm. (15 gr.) of aspirin for pains in the calves of the legs. In fifteen minutes there was swelling of the upper lip which quickly spread over the whole face. This was followed by difficulty in swallowing, frequent respiration and a rise in the pulse rate to 160. These symptoms subsided gradually after twenty minutes, to be replaced in an instant by a rash like urticaria over the whole body, but chiefly upon the backs of the hands, the neck and feet. On the next morning all signs had disappeared save the swelling and tense feeling of the lips and eyes. The writer explains the poisoning by the supposition that by some chemical change in the stomach phenol was set free and rapidly absorbed.

EXPLANATION OF FAVORABLE ACTION OF REST IN BED ON THE FEVER OF PULMONARY TUBERCULOSIS.

Pickert [7] explains the good effects of rest in bed on the fever of phthisical patients by the passive congestion of the lungs which is thereby produced. If this is so, the reverse of this condition, or anemia of the lungs, should be followed by fever. This he was able to show to be the case. If phthisical patients, who have gotten free or nearly free of fever by lying abed for several weeks, are allowed to sit up, the temperature varies considerably according to whether their feet are resting on the floor or are extended horizontally. In the former position there is a venous hyperemia of the legs with consequent diminution of blood in the upper part of the body. Systematic experiments showed differ-

[4] Medical News, 1903, Aug. 29.
[5] Cit. Am. Med. 1903, Sept., p. 418.
[6] Cit. in Therap. Monat., 1903, Oct., p. 550.
[7] Cit. Zeit. f. diätet. u. phys. Therap., 1903, Oct., p. 410.

ences reaching even 1½° C. on single days. The highest temperatures always occurred on those days during which the legs were at no time in a horizontal position.

DANGER IN DISPENSING TABLETS.

One of my friends recently had the following sad experience. A mother brought to his office a child seventeen months old with convulsions. The baby had found a bottle containing pink tablets. By an unfortunate circumstance a file was near by and before any one was aware the baby had broken the bottle and swallowed all the tablets. The mother at once gave mustard and water, but not a sufficient quantity to induce vomiting. The child at first was not indisposed, but in about one and one-half hours convulsions began. The child was then taken to the doctor, but lived only fifteen minutes in his office.

I understand that one large firm has discontinued coloring its tablets, because they attracted the attention of children and led to several instances of poisoning.

Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTY-NINTH ANNUAL MEETING, HELD AT WASHINGTON, D. C., MAY 12, 13 AND 14, 1903.

FIRST DAY — TUESDAY, MAY 12.

DR. J. W. PUTNAM of Buffalo, president, in the chair.

ADDRESS OF PRESIDENT.

The Congress of American Physicians was founded because the interdependence of the different branches of medicine was recognized by the master minds of the profession. The time had come when specialists needed to broaden their interests and enlarge their views of the field of medicine. Specialism is so engrossing that its devotees are in danger of becoming narrow in their interests and their activities.

The range of diseases we are called upon to treat is so large and so varied that it would seem impossible for us to become narrow.

The chronic cases of paralysis with deformities from various cerebral spinal and peripheral causes form a large and hitherto hopeless class. For years those afflicted with diplegia, hemiplegia and spastic paraplegia have sought medical aid in vain. Tendon transplantation and the principles which govern the operation should find a place in our chapters on treatment. It should be taught to the student from the neurological standpoint as well as from the surgical. We have long ago made common cause with the surgeon in cerebral and spinal operations; let us extend it to the domain of surgery of the neuromuscle machine. To the surgeon belongs the technique. To us belongs the duty of selecting cases for operation and of enlarging its field of usefulness. The after care of the patient is as important as the surgical. The operation must be followed by an education, both mental and physical, which we must direct. It is only through co-operation that the best results will be obtained.

Hitherto the relation of neurology to obstetrics has not been sufficiently appreciated nor emphasized. The effect of prolonged labor upon the child is being studied, and requires much more careful investigation in order to determine the effect of cranial birth injuries upon the brain. The obligation rests with us to sound the note of warning in season and out of season that epilepsy is in a large number of cases due to cranial birth lesions. The lesson must be so impressed that it will be a rule with accoucheurs to examine the head for fractures or undue depression after severe labor. When this practice has become a rule, and the cranial injuries are treated early and carefully, we may see as a result a diminution in the number of cases of epilepsy, idiocy and cerebral birth palsies.

THE SIGN OF THE ORBICULARIS.

This was the title of a paper by DR. GEORGE W. JACOBY of New York. The sign of the orbicularis is a symptom which consists of the inability of a hemiplegic voluntarily to close the eye upon the paralyzed side except in conjunction with the other eye. Thus in cases of hemiplegia the temporo-facial branch of the facial nerve is often so slightly affected as to lead to doubt whether the upper facial territory is involved at all. If in such a case the hemiplegic be asked to close both eyes together, he is able to do so without difficulty. He is also able to close the eye upon the sound side while keeping the eye upon the affected side open, but he is unable to reverse this procedure and close the eye upon the paralyzed side while keeping that upon the unaffected side open. This sign has hitherto been supposed to occur in central paralysis only. It was claimed by Jacoby that in many cases of peripheral paralysis this sign is present, and can be found if sought for at the proper time. These observations formed the basis for the following conclusions: (1) The statement of Bard that the sign is invariably lacking in peripheral facial paralysis, and is therefore a distinguishing mark of central affection, is incorrect. (2) The presence of the sign in peripheral paralysis is further proof of the existence of commisural fibers between the nuclei of the seventh nerves. (3) The sign is of clinical value in so far as its presence in peripheral paralysis shows that complete recovery has not yet occurred. (4) The secondary over-action in the orbicularis palpebrarum, which is late in appearance, and always coincides with some recovery in power, does not occur in those cases in which the sign having been present has passed away.

DR. G. L. WALTON of Boston thought it important to bear in mind that unilateral control of the lid movements differs on the two sides in health. More individuals can close the left eye alone than can close the right eye alone. This

may be due to the better education of the left cerebral hemisphere, for the education consists in learning to hold one eye open, not to close one eye.

Dr. Jacoby said that the independent closure of each eye was entirely acquired, and that in countries where a great many pursuits are followed which necessitate the independent closure of the eyes, it is much greater than in countries where those pursuits do not exist.

THE ACHILLES REFLEX AND THE FRONT TAP.

This was the title of a conjoint paper by Drs. George L. Walton and W. E. Paul of Boston. It was stated that the Achilles jerk has been extensively studied, but has not taken the place it should as a routine test of equal importance with the knee jerk; the front tap has not been extensively studied. The Achilles jerk is practically of equal constancy with the knee jerk, is more uniform in excursion and requires less skill than the knee jerk. In tabes the writers have found it absent more constantly than the knee jerk. The kneeling posture is preferable in most cases. In 500 cases without central nervous disease this reflex was wanting on both sides in only one instance; on one side, in four. Sluggishness of the tendon reflexes in health may be due to prior toxic affection, as diphtheria. In epilepsy the Achilles reflex and knee jerk are active except during the attack. The Achilles jerk is sometimes absent in osteo-arthritis with sciatic pain. The writers explain the front tap as allied to ankle clonus, though not of its sinister import. The foot being dorsally flexed by the examiner puts the calf muscles on the stretch, and the tap upon the tibialis anticus, by tending to dorsally flex the foot still further, suffices to produce contraction of the calf muscles. This reflex was present in 40% of 500 individuals healthy or suffering from no nervous disease. In epilepsy, hysteria, neurasthenia and other neuroses, it was found present in about 75%. It was never found present in tabes or other hypotonic affections.

THE REFLEXES IN LONG DISTANCE RUNNERS.

This was a paper by Drs. Philip C. Knapp and J. J. Thomas of Boston. They had made a comparative study of the knee jerk and allied reflexes in the participants in the "Marathon" run of twenty-four miles taken before and after the run, showing the influence of severe physical exertion combined with mental excitement upon the reflexes. In some cases the knee jerks were lost; in all, the plantar reflexes were more or less exaggerated.

These two papers were discussed together.

Dr. F. W. Langdon of Cincinnati said he had made it a rule to test the ankle jerk in tabes and other conditions. He had not found it uniformly absent in tabes, but had seen a number of cases of tabes with the knee jerk and ankle jerk preserved. In sciatic neuritis it is either markedly diminished or absent on the affected side.

Dr. Joseph Collins of New York found the ankle jerk more frequently absent in tabes than the knee jerk, the ankle jerk sometimes disappearing earlier than the knee jerk, which is a more constant manifestation. In the depressed or vasomotor type of neurasthenia he had found the "front tap contraction" diminished or absent in a large proportion of cases.

Dr. C. L. Dana of New York said that the ankle jerk was absent in one-half the cases of so-called sciatica. It is not so easy to test the ankle jerk as Dr. Walton has stated. It may also be elicited by re-enforcement.

Dr. H. T. Patrick of Chicago had been in the habit of testing the ankle jerk in every case, and had noted a difference in the two sides more frequently than in the case of the knee jerk. In some cases of tabes the knee jerk disappears first; in others the ankle jerk is the first to disappear.

Dr. Philip Zenner of Cincinnati had observed a number of instances in elderly individuals in whom the ankle jerk was absent. The nervous system appeared to be normal.

Dr. Jacoby said that in cases of tabes when the ankle jerk is present a careful examination will show that the knee jerk is also present, but that we may have the ankle jerk absent and the knee jerk present. The loss of the ankle jerk usually precedes the loss of the knee jerk.

Dr. Knapp agreed with Dr. Walton in his conclusions regarding the ankle jerk. He thought that the front tap contraction seemed more or less associated with ankle clonus. It has considerable significance as an indication of exaggeration of the tendon reflexes.

Dr. Walton in closing the discussion said that probably those cases of sciatica with loss of ankle jerk result from pressure on the nerve trunks by the products of osteo-arthritis of the spine, or possibly from neuritis. He had been surprised to find how persistent the ankle jerk and the knee jerk are in advancing age. There is no invariable rule regarding the priority of disappearance of the knee jerk or ankle jerk in tabes.

(All of the speakers agreed that the best method of obtaining the ankle jerk was to have the patient in a comfortable kneeling position on a chair during the examination.)

PRIMARY SARCOMATOSIS OF THE CENTRAL NERVOUS SYSTEM.

This was the title of a paper and the report of cases by Drs. Wm. G. Spiller and Wm. F. Hendrickson of Philadelphia. In the first case the symptoms were those of brain tumor and of transverse lesion of the thoracic cord. Multiple sarcomata of the brain and spinal cord were found. In the second case the symptoms were those of cerebellar tumor, and operation was done. Many tumors, some large and some small, were found in the membranes and nerve roots of the brain and spinal cord. In the third case the symptoms were those of a transverse lesion of the thoracic cord. A primary sarcoma of the spinal cord substance was found. Attention was called to the comparatively few symptoms

present in Case 2, notwithstanding the extensive sarcomatosis. The resemblance to syphilis of the nervous system was also discussed. The occurrence of a tumor in the cerebello-pontile angle in many of these cases of sarcomatosis was mentioned, and the question of operation was raised. The importance of the recognition of sarcomatosis of the central nervous system was emphasized, especially as regards surgical intervention when the symptoms seem to indicate that only one tumor is present, as in Case 2.

SPINAL CORD TUMOR TREATED BY OPERATION.

DRS. JAMES J. PUTNAM and J. W. ELLIOT of Boston reported three cases of tumor involving the spinal membranes.

The first case was noteworthy because the tumor, which proved to be a sarcoma, involved the axis and atlas and had caused a generalized paralysis, together with marked impairment of the respiration.

The growth was not sharply delimited, but was removed, so far as possible, with the curette.

In spite of the serious nature of the disease the patient has improved so much that he is now keeping a small store.

Three years have now elapsed and there has been no recurrence of the disease.

In the second case, a new growth, which was likewise of sarcomatous character, formed a collar about the spinal cord and dura at the junction of the cervical and dorsal region. The removal was successfully accomplished, but the respiration became much impaired even during the operation. The next day the temperature began to rise and continued to mount rapidly until the patient's death on the second day.

This result recalled one of the rarer effects of spinal injury. No cause could be ascertained for it, unless it were that the dura was punctured slightly at the time of operation.

In the third case, which was one of secondary cancer, involving the vertebral column and membranes in the lower dorsal region, the operation had been undertaken distinctly for the relief of pain. The growth was discovered at the expected point and was removed, so far as possible. The main point of the operation, however, consisted in the cutting of two spinal nerve roots, which were involved in the tumor. As a result of this, the patient's condition was considerably ameliorated for a number of weeks, at the end of which time she was seized with convulsions and other signs of involvement of the brain, and died shortly afterward.

The last two papers were discussed together.

DR. W. A. BULLARD of Boston said that where we have to deal with the dura and the membranes of the spinal cord, laminectomies are not so harmless as one might suppose. In a recent case in which there was anterior dislocation of the fourth cervical vertebra, laminectomy was done for pachymeningitis. The operation was successful surgically, but after forty-eight hours fever developed, and the patient died without apparent cause. He had seen the same result in other cases.

DR. B. SACHS of New York believed that cases of general sarcomatosis are not so very rare. He had seen a case of multiple gliosarcoma in a child which ran a rapid course. In a man forty years of age a tumor appeared on the frontal bone. On account of the multiplicity of symptoms the question was raised whether the disease was of syphilitic origin or sarcomatosis. The case terminated fatally, and proved to be a general sarcomatosis. He did not think special credit was due any one for making a correct localization for spinal cord or brain disease. The question of greater importance is to be able to determine before operation the character of the morbid process. In this connection he cited a case in which all the signs of spinal cord tumor were present, and an accurate localization recorded. Upon operation no growth was discovered. The patient died two weeks later. Macroscopically the cord appeared normal, but on microscopical examination a number of small tubercles were found in the dorsal and sacral roots with tuberculous infiltration of the cord.

DR. H. T. PATRICK of Chicago reported a case in which a tumor apparently sprang from the auditory nerve. The patient had gradually become quite deaf, this having been preceded by rhythmic tinnitus. The tumor was very easily removed, and proved to be an osteo-sarcoma of the petrous portion of the temporal bone, the deafness being due to protrusion of the growth into the internal ear. Death took place shortly after the operation.

DR. WM. C. KRAUSS of Buffalo referred to a successful case of removal of a spinal cord tumor from the cervical region which he reported at last year's meeting of the Association. Five months after the operation the patient died. The tumor was a small round-cell sarcoma.

DR. M. A. STARR of New York asked Dr. Putnam if there had been any respiratory difficulty during the operation for tumor of the axis. In a case of fracture of the third cervical vertebra there were distinct pressure symptoms upon the cord. During etherization he stopped breathing. Artificial respiration was kept up. The second time, chloroform being used, all voluntary respiration ceased. With artificial respiration during the entire operation a considerable amount of bony callus was removed with the relief of pressure. The boy is now in perfect health at the end of five years. He thought Dr. Spiller had done great service in presenting the subject of multiple tumors of the brain and spinal cord. He referred to a case in which a tumor was localized in the motor zone, but at the operation no tumor was discovered. The patient was tuberculous and lived four months. At the autopsy eight tumors were found scattered around in different areas of the brain, none being located in the motor zone. One tumor had absorbed about one-half of one lobe of the cerebellum, for which no symptoms at all had been present. The medullo-pontal junction is a favorite point for tumors. He had seen five cases. In all of these operated upon death resulted. Sudden

death is very common in all brain tumors. He recently had two cases of tumor of the cerebellum. Both patients died suddenly.

Dr. G. J. Preston of Baltimore spoke of malignant cerebral tumor following disease in the breast, and reported a case in which the growth was localized in the parietal region but was found in the ponto-bulbar region.

Dr. Collins referred to a case of sarcoma in the abdomen which terminated fatally. Multiple sarcomata were found in the brain and spinal cord.

Dr. C. L. Dana said that a few years ago he saw a patient in whom a sarcoma was successfully removed from the cervical portion of the cord. Improvement followed. In a case of removal of a tumor from the pontine angle the patient died. He called attention to the fact that cerebral softening from arterial fibrosis sometimes simulates brain tumor exquisitely.

BRAIN TUMOR.

Dr. C. Eugene Riggs of St. Paul reported two cases of brain tumor (endothelioma) with characteristic symptoms of involvement of the left motor area. Both were submitted to operation and terminated fatally.

Dr. Charles K. Mills of Philadelphia spoke at length in regard to operation for brain tumors. He believed that the cause of failure in operation was often due to imperfect methods of procedure. In Philadelphia they had gradually evolved more and more rapid methods of operation. He recommended the large osteoplastic flap made by a combination of the use of the trephine with the dental engine. He considered this method of value on account of the saving of time. In the last operation the skull was opened in eight minutes without shock. He believed strongly in operation for brain tumors in the majority of cases, if they were at all accessible.

Dr. Starr said that the best method to use was Doyen's electrical apparatus, and he considered it as rapid as the method spoken of by Dr. Mills. By this means it was possible to cut through the skull in fifteen seconds. He considered this a great improvement upon the old-fashioned way of cutting with chisel and hammer.

Dr. Dana had seen the instrument mentioned. He thought there was a good deal more in the surgery than there was in the burr. In one of the prominent hospitals in New York, with this burr he had known it to take over an hour to get through the bone. With the best instrument the surgeon must be trained in its use.

Dr. Sachs thought the question of time scarcely entered into the technique. He did not consider the fatal issue in so many cases the result of the modern operation.

Dr. J. W. Putnam of Buffalo was opposed to the statement that slowness makes no difference. He did not believe it possible to settle on one form of operation, because different surgeons will find that their own speed differs with the instrument.

(To be continued.)

Recent Literature.

The Practical Application of the Röntgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois, and Eugene Wilson Caldwell, B.S., Director of the Edward N. Gibbs X-Ray Laboratory, University and Bellevue Hospital Medical College. New York: W. B. Saunders & Co. pp. 591.

The book is written in collaboration by Dr. Pusey and Mr. Caldwell, the former a dermatologist, the latter a practical scientist. It is divided into two parts, the first of which, by Caldwell, deals with the use of tubes, interrupters, induction coils and static machines and with fluoroscopy and radiography. The several lists of apparatus are very complete and the descriptions detailed. This part is preparatory.

The body of the book deals with the therapeutics of the x-rays, exhaustively considered by Pusey. A description full, interesting and lucid of the effect of the x-rays upon the tissues and upon bacteria is followed by a discussion of the phenomena observed. The bulk of the second part consists of a description of diseases which the author has treated with the x-rays. Numerous illustrative cases are cited, accompanied by a brief discussion and summary of the results obtained. The tone of this part of the book is conspicuously judicial. This observer has used the x-rays in a large number of cases of great variety with the evident intention of determining their efficacy, and throughout he weighs his facts without prejudice. Failures and successes are both recorded. The last chapter gives the general conclusions. Here Dr. Pusey gives his estimate of the relative susceptibility to the x-ray treatment of the various diseases, and states that this method finds its greatest field in malignant disease. It is interesting to note that Dr. Pusey recommends in operable cases a combination of surgical and x-ray treatment.

The book is indispensable to those who use the x-rays as a therapeutic agent, while its illustrations are so numerous, its descriptions of apparatus, of technique and of tissue changes so complete, that it becomes valuable to every one.

Nose and Throat Work for the General Practitioner. By George L. Richards, M.D., Fall River, Fellow of the American Laryngological, Rhinological and Otological Society, etc. New York: International Journal of Surgery Co. 1903.

This is a little book of three hundred and thirty pages, intended as an elementary manual for the general practitioner and the student. Although the author does not mention any such origin, it is just such a book as a lecturer, whose duty it is to cover the field in ten or twelve lectures, might easily produce by writing out his lectures, and inserting such diagrams as happened to come to hand. Of course the lecturer

would describe cases that he had seen, and show instruments that he uses, and draw a better picture of some diseases than of others, also with so little room, subjects of more or less importance would be omitted. Viewed from this standpoint, the book is good. The description of diseases is clear, and the choice of treatment judicious. Going a little more into detail, the abnormalities of the nasal septum, atrophic rhinitis, empyema of the accessory sinuses, tracheotomy, adenoids, are well described. More difficult subjects, such as nasal and laryngeal neuroses, fibroid tumors of the naso-pharynx and chronic ethmoiditis, with polypi and asthma, are somewhat disappointing. No mention is made of the possibility of an infectious origin of acute cold, which is worthy of consideration, at least on account of the number of its advocates. The subject of tuberculosis should include lupus, which is distinct and common enough to be at least mentioned. The inflammatory diseases of the tonsils are a little confusing, and the etiology of pharyngo-mycosis omitted, while its treatment is unnecessarily strenuous. As a whole the book is attractive and trustworthy.

An Atlas of Human Anatomy. For Students and Physicians. By CARL TOLDT, M.D., assisted by ALOIS DALLA ROSA, M.D. Translated from the Third German Edition and adapted to English and American and International Terminology by M. Eden Paul, M.D. (Brux.), M.R.C.S., L.R.C.P. First Section: A — The Regions of the Human Body; B — Osteology. Illustrated. New York: Rebman Company. 1903.

This is the first volume of a translation of Toldt's *Atlas of Human Anatomy*, the translation being from the third German edition and adapted to English, American and International terminology. In the translator's preface it is suggested that, inasmuch as the science of human anatomy is purely descriptive in its methods, and its field not very extensive, it is one of the few sciences in which something approaching finality has been reached. Atlases of anatomy in English have hitherto been fragmentary, and it is said that up to the appearance of this work, no actual pictorial representation of all the data of human anatomy has been available. In this first volume of the series, which deals with, first, the regions of the human body, and, secondly, with osteology, there is a very strict adherence to the atlas plan. Descriptive text is small in amount and closely associated with the very numerous drawings which occupy each page. Various anatomical structures of importance are specifically indicated on each cut. The drawings are carefully made and in very considerable detail, without unnecessary elaboration.

In general, so far as one may determine from a first installment, this atlas when completed will represent an important addition to the means of study of human descriptive anatomy. The difficult matter of nomenclature has been met by the translator as well as could be expected in the present unsettled state of English terminology. The volume is bound not very attractively in art canvas, and is provided with an exhaustive index.

The Work of the Digestive Glands. Lectures by PROF. J. P. PAWLOW, Director of the Physiological Department of the Institute for Experimental Medicine, and Professor in the Imperial Military Academy of Medicine, St. Petersburg, etc. Translated into English by W. H. THOMPSON, M.D., M.CH., F.R.C.S., King's Professor of the Institute of Medicine, Trinity College, Dublin, etc. Illustrated. London: Charles Griffin & Co., Limited. Philadelphia: J. B. Lippincott Co. 1902.

Professor Pawlow's lectures, originally published in Russian, soon appeared in German and French, and now, after the lapse of some five years, have been translated into English in an admirable manner by Professor Thompson. Pawlow's work attracted attention, because he took advantage of the most recent surgical methods in his study of digestive secretions. He was able to separate from the original stomach a fold of mucous membrane, out of which he formed a small stomach which communicated with the surface by a fistula. The technique of the operation was such that the nerve supply of the two stomachs was preserved intact, though the mucous membrane was distinct. The small stomach thus served as a model of the larger, but the juice secreted by it was uncontaminated by food, and so allowed of more accurate observation.

The chief principle Pawlow deduced from his work was the specific excitability of the nervous mechanism of the glands. In accordance with this property the glands furnish a secretion which is adapted in quality and in quantity to the food eaten; for example, a meat diet stimulates an abundant flow of gastric juice, while a fat diet decreases it. Some months ago we commented upon this work of Pawlow in our Department of Progress in Therapeutics, to which we would now refer.[1]

Popielski[2] has recently subjected Pawlow's work to rigid critical analysis. We hope that Professor Pawlow will be able to meet these criticisms.

Radium and Other Radio-Active Substances; Polonium, Actinium and Thorium, with a Consideration of Phosphorescent and Fluorescent Substances, the Properties and Applications of Selenium and the Treatment of Disease by the Ultra-Violet Light. By WILLIAM J. HAMMER, Consulting Electrical Engineer. Illustrated. New York: D. Van Nostrand Company. 1903.

This small book of seventy-two pages discusses matters relating to radium, selenium and ultra-violet rays, together with various collateral topics. The book is a timely one and details many facts, both historical and scientific, which it behooves us to know. It is profusely illustrated.

[1] Boston Med. & Surg. Journ., 1902, No. 6.
[2] Wien. med. Presse, July, 1903.

THE BOSTON

Medical and Surgical Journal

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THE MASTER-WORD IN MEDICINE.

Among other events of interest on the occasion of the opening of the new laboratories of the Medical Faculty of the University of Toronto, recently held, was an address by Dr. William Osler on "The Master-Word in Medicine." Dr. Osler for very obvious reasons has come to be the most sought-for speaker on such occasions in the English-speaking world. Not a year passes that he does not yield to the calls made upon him to address men about beginning their professional life. These addresses never fail in suggestiveness and point the way quite unerringly to the young man about to begin his difficult lifework. This last address delivered at Toronto is not unlike many of its predecessors, and offers food for thought not only to those to whom it was primarily addressed, but also to those of maturer years who are failing or succeeding in the struggle.

We are not surprised to find that Dr. Osler takes as the master-word "Work," which he regards as an essential of success, an opinion with which he will no doubt find few to take issue. Interest in one's work he finds the first step toward success. He lays stress upon the necessity of systematic habits of work; he urges charitableness toward brother practitioners; he insists that we should "cultivate the gift of taciturnity and consume our own smoke with an extra draught of hard work so that those about us may not be annoyed with the dust and soot of our complaints." These certainly are truths often reiterated, but coming from Dr. Osler, with his peculiar charm of statement, they still find lodgment in our minds. It is a source of personal satisfaction to us to find that Dr. Osler in this same address denies the reality of what he calls the "bogie of overwork." Of this he says:

> Much study is not only believed to be a weariness of the flesh, but also an active cause of ill-health of mind in all grades and phases. I deny that work, legitimate work, has anything to do with this. It is that foul fiend Worry who is responsible for a large majority of the cases. The more carefully one looks into the causes of nervous breakdown in students, the less important is work *per se* as a factor. There are a few cases of genuine overwork, but they are not common. Of the causes of worry in the student life there are three of prime importance, to which I may briefly refer.

If students of medicine and practitioners as well could realize the truth of these statements it would be well for the peace of mind of a large element in the profession.

In spite of the fact that Dr. Osler questions the value of introductory addresses, we quite agree with our contemporary, the *British Medical Journal*, when it says, speaking of this address, that his own furnishes an excellent justification for the existence of the custom. We commend it to our readers as a lay sermon of more than ordinary merit.

THE SPRECKELS PHYSIOLOGICAL LABORATORY.

We have already alluded to the establishment of the Rudolph Spreckels Physiological Laboratory at the University of California. It will be remembered that this laboratory was established on a somewhat different basis from others of a similar sort in this country. It was designed primarily to further research in physiological lines, with the understanding that teaching of elementary students should be a somewhat secondary consideration. This laboratory was formally dedicated Aug. 20 of this year.

Apart from the addresses made, the occasion was rendered notable by the presence of Professor Ostwald, who had come from Europe to California for the purpose of assisting in the dedicating of the new laboratory. Prof. Jacques Loeb, to whom in large measure has been due the conception of this laboratory and who is to be its director, delivered at the dedicatory exercises a brief address entitled, "The Limitations of Biological Research." After commenting upon the significance to American research that a laboratory of this character should be established, he outlined in a general way the direction

and tendencies of the work which it is proposed to carry on. He urged the necessity of recognizing physical chemistry as the foundation of biology, and defined as one of the fundamental problems of biology the necessity of answering the question as to whether or not is it possible to making living matter out of dead matter. Regarding this question, which has been a bone of contention for centuries, he felt that it was not too bold to prophesy that through the study of enzymes a solution might be forthcoming. Biologists, he thinks, will either succeed in transforming dead matter into living matter, or they will ultimately find that there is as definite a discontinuity between dead and living matter as between two chemical elements. A second problem facing the modern biologist is the question of transforming one species into another. In this he expresses the belief that we shall either succeed in bringing about a large transformation from the original form or determine the fact that at a certain point the constancy of a species is reached.

In general, Professor Loeb's address, brief as it was, expresses admirably the importance of biological research. Under such leadership as this new laboratory will have, there can be no question that we may in the near future look for results of very positive scientific value. Professor Loeb's preliminary work is a sufficient guarantee of this.

THE ORGANISM OF SMALLPOX.

As announced in our issue of last week, Dr. Gary N. Calkins of New York spoke, Nov. 9, at a meeting of the Biological Section of the New York Academy of Sciences, on "The Life History of the Organism of Smallpox." As is now universally known, Dr. W. T. Councilman and his colleagues have been working for many months past on the etiology of smallpox. Preliminary conclusions were presented at the meeting of the American Association of Pathologists and Bacteriologists, held at Washington in May of this year. At that time Dr. Councilman presented strong evidence to show that the causative agent in smallpox was a parasite of the protozoön type. Certain details in the life history of this parasite were at that time not definitely made out. This work has been prosecuted since by Dr. Calkins at Dr. Councilman's request and, as stated in a report of the meeting, published in the *Medical Record*, the results of this research were presented at Dr. Councilman's suggestion. Dr. Calkins described in detail the various phases of the life history of the organism, illustrated by lantern slides made from actual specimens. So far as one may learn from the report before us, this work is a confirmation of the opinion expressed by Dr. Councilman in May that a protozoön is the actual cause of the disease.

An added interest was given to the meeting by a discussion of certain inoculation experiments made by Dr. Brinckerhoff, whose name from the first has been identified with this research. Dr. Brinckerhoff obtained striking results through the inoculation of apes, in each of which there had been a development of a lesion analogous to the vaccinia lesion. In general he had found that the disease in the monkey was comparable to the disease as observed in man, and, furthermore, his findings regarding time relations between the various stages of the parasite and the evolution of the lesion were quite in accord with results obtained by Dr. Calkins on human lesions. This second published report on the progress of this important work must be regarded with much interest. The final, detailed results of the investigation will now be awaited with even greater expectation than before.

THE GERMAN EMPEROR.

THE penalty of position is admirably exemplified in the experience through which the German Emperor is now passing. Discussion is rife in medical and lay circles throughout the world as to the present character and future possibilities of the affection with which he is afflicted. So far as one may judge from published reports, it is sufficiently clear that the growth which has been removed from the larynx is of benign character and in itself presages no serious outcome. This is the expressed opinion of Professor Schmidt, who performed the operation, and also of Professor Orth, who made the microscopical examination.

Such growths as this are not unusual and certainly are not in themselves inimical to life. It is eminently natural, however, that people should recall the fate of the Emperor's father and also circumstances concerning his mother's death. How justified such apprehensions may be it is quite impossible to prophesy, and we are inclined to think that it is the part of wisdom, as well as of good taste, to await the outcome, whatever it may be, without speculation. In the meantime the world will certainly wish the

Emperor a speedy recovery from his present disability and will sincerely hope that the disease may have been entirely eradicated, as frequently happens in such cases.

MEDICAL NOTES.

Possible Sanatorium at Capri. — It is stated that Professor von Behring has proposed to transform the villa of the late Herr Krupp, which he has purchased, into a laboratory and sanatorium for tuberculosis. The residents of the island have instituted a vigorous protest and hope to thwart the proposed innovation, giving as one reason the dependence of the island upon foreign visitors, which it is maintained would be largely prevented in case a sanatorium were established.

A Correction. — In a statement made in our issue of last week regarding King Edward's Sanatorium for Tuberculosis it was erroneously implied that Sir Edward Cassel, who gave the money for the sanatorium, had died, and that the money had been left in the form of a bequest. The facts are that Sir Edward Cassel is still living and that a gift and not a bequest made possible the King's Sanatorium.

The D. W. Harrington Lectureship, University of Buffalo. — The Medical Faculty of the University of Buffalo has chosen Dr. Samuel J. Meltzer of New York to deliver these lectures for 1903. The subject selected by Dr. Meltzer is "Edema, a Consideration of the Physiological and Pathological Factors Concerned in its Formation." The lectures will be delivered in the Medical College Nov. 30 and Dec. 1, 2 and 3, at 5 P.M. The medical profession is cordially invited to attend.

These are the first lectures given on this foundation. Lectures will be given as often as the income from the fund will warrant.

Professor von Mikulicz on America. — In lecturing recently at Breslau, according to the *Medical News*, Professor von Mikulicz spoke of his recent trip to the United States. He praised American surgeons, and said he found more fruitful ideas among them than among the French or English. Part of the allusion was as follows: "The time is past when we were the givers and the Americans the receivers. The American character has as a fundamental feature unlimited self-confidence. The American believes he can do anything that is wanted, and he wishes to see America regarded as the most beautiful and most preëminent land in the world. Nevertheless, we have no ground for fear, for, in the sharp economic contest, the Germans have some advantages over the Americans. The latter recognize the efficiency of the Germans, calling them the "Yankees of Europe."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 18, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 63, scarlatina 38, typhoid fever 22, measles 119, smallpox 0.

Adulteration of Phenacetin. — In the Boston Municipal Court on Monday, Nov. 9, the case of the Commonwealth *v.* Mansfield & Gardner came up for trial. The firm pleaded *nolo contendere* and was fined $100. This was a case of drug adulteration introduced by the State Board of Health, the article in question being phenacetin adulterated with acetanilid.

Bequest to New Haven Hospital. — By will of the late Sarah B. Harrison of Connecticut the New Haven Hospital gets $30,000, to be used for the establishment of free beds.

Harvard Medical School Scholarships. — The Faculty of the Harvard Medical School announces the following awards of scholarships for the ensuing year:

The Edward M. Barringer Scholarship of $500, divided as follows — $300 to G. S. Amsden, 3M., and $200 to H. W. Godfrey, 2M. The Isaac Sweetser Scholarship of $250 — to A. H. Crosbie, 2M. The Claudius M. Jones Scholarship of $250 — to S. J. Beach, 3M. The Hilton Scholarships of $225 each — to C. R. Metcalf, 2M., and W. A. Sawyer, 2M. The Alfred Hosmer Linder Scholarship of $200 — to T. Ordway, 3M. The Eveleth Scholarships of $200 each — to E. H. Place, 4M., L. S. Beals, 4M., and L. G. Beeley, 4M. The Edward Wigglesworth Scholarship of $200 — to C. L. Overlander, 3M. The Charles B. Porter Scholarship of $200 — to R. S. Stearns, 3M. The Faculty Scholarships of $200 each — to L. Arkin, 4M., W. H. Clark, 4M., H. B. C. Riemer, 4M., and W. C. Woodward, 4M. The John Thomson Taylor Scholarship of $200 — to B. E. Sibley, 3M. The Lucius F. Billings Scholarship of $200 — to R. H. Goldthwaite, 2M. The Orlando W. Doe Scholarship of $100 — to W. L. Barnes, 4M. The Charles Pratt Strong Scholarship of $100 — to C. H. Staples, 4M.

NEW YORK.

Accidents from X-Rays. — At a meeting of the Society of Medical Jurisprudence held Nov. 9, Dr. Carl Beck read a paper on the "Medico-Legal Aspect of Accidents Caused by X-

Rays." In it he said that undesirable results frequently attended the use of the x-ray, even when it was applied by the most expert operators. In order to avoid such consequences as far as possible, he advised that a very careful study should be made of each individual patient so as to determine as nearly as might be done the proper duration of an exposure. While some persons may be subjected without harm to long exposures at frequent intervals, others are so sensitive to the effects of the rays that only short exposures, given at long intervals, can be borne without injurious results. At this meeting Theodore Sutro, Esq., was renominated for president and Dr. Carl Beck for vice-president.

OFFICERS OF NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS. — At the thirteenth annual meeting of the New York State Association of Railway Surgeons, which was held at the New York Academy of Medicine on Nov. 12 and 13, the following officers were elected: president, Dr. Charles G. J. Finn, Hempstead, Long Island; vice-president, Dr. G. T. Conn, Concord; secretary, Dr. George Chaffee, Brooklyn (re-elected); treasurer, Dr. J. K. Stockwell, Oswego. Dr. Henry Flood of Elmira presided, and among the papers read were the following: "Car Sanitation," by Dr. James A. Exton; "The Diagnosis of Injuries to the Head," by Dr. C. B. Herrick; "The Diagnosis of Injuries to the Hip," by Dr. Wisner R. Townsend; "The Modern Treatment of Wounds," by Dr. Walter Lathrop and "Traumatism as a Factor in the Causation of Hernia," by Dr. William B. Coley. In the discussion of the latter Dr. A. J. Gilbert said that hernia had cost the railroad companies more money than any other one cause, and declared that it was "a frightful source of fraud, particularly among employees."

HOSPITAL SATURDAY AND SUNDAY ASSOCIATION. — The board of trustees of the Hospital Saturday and Sunday Association held its first meeting of the season on Nov. 10. The application of the St. Andrew's Convalescent Hospital for admission to the Association was favorably acted upon, and this brings the membership up to forty institutions. The New York Hospital, which is the wealthiest member, formally waived its privilege to receive a share of the annual collection. The general agent reported on the prospects of the coming Hospital Saturday and Sunday. Last year the collection amounted to $83,500, a considerable increase over any previous year.

CONSTITUTIONALITY OF BUILDING LAW. — The constitutionality of certain disputed sections of the building law has been upheld by Justice Freedman of the Supreme Court in his decision on the Moeschen case, which has interested a large number of builders and tenement property owners, the decision sustaining the verdict of a jury in the Municipal Court before which the first trial was held. Some time ago Mrs. Moeschen was ordered to substitute modern closet drains for backyard "school sinks" in a tenement which she owned. She appealed to the courts on the ground that the order was an unreasonable exercise of the state police power, and as such unconstitutional. In view, however, of the importance of the question involved, and the case being a pioneer, Justice Freedman states that the request made by both parties for permission to appeal to the Appellate Division should be granted.

FIVE THOUSAND DOLLARS FOR AN EAR. — The newspapers mention that no less than one hundred and fifty persons willing to part with an ear for $5,000 applied at the office of a physician, a wealthy patient of whom had offered that amount for an ear of the right size and shape to take the place, by means of a grafting operation, of one that he had lost.

DIPHTHERIA AT ELMIRA. — A severe outbreak of diphtheria recently occurred in the New York State Reformatory at Elmira, but by the prompt and free use of antitoxin it appears to have been quickly suppressed, with but a small mortality.

ACCIDENT INSURANCE POLICIES. — An accident insurance policy issued to one Coles of the New York Casualty Company stipulated that it did not cover injuries resulting directly or indirectly from fighting, wrestling, scuffling, altercation, quarrel or assault. Coles, the insured, was employed as a bartender, and while on duty in this capacity had occasion to order a noisy individual from the premises. The disorderly person refused to go, and grappled with Coles, who, while forcibly resisting the assault, or while pushing the aggressor from the room, was injured. On an appeal of the case, which at first was decided against the insured, it has been held by the Second Appellate Division of the Supreme Court that the facts did not operate as matter of law to deprive the insured of all claim against the company, and hence it was an error to dismiss a complaint in an action for

indemnity on the ground that insured violated the policy.

Miscellany.

THE PHYSIOLOGY OF BITTERS.

The custom of taking bitter appetizers immediately before the heavy meals of the day is widespread, both in this country and abroad, the object being, of course, to stimulate the secretion of gastric juice. Latterly it has been suggested that it would be more physiological to make use of a small quantity of alkali instead, as that is known to exercise a favorable influence upon peptic secretion. The chief objections to the use of bitters have been based on researches by Tchelzov, who found that the administration of large doses of quassia hindered rather than helped the digestive process. Reichmann, moreover, showed that in the fasting stomach, the secretory activity of which is normal or diminished, a bitter drink produced less secretion of gastric juice than a draught of distilled water. These experiments take account solely of the specific action of the bitters, and do not regard their reflex effects. These have been particularly studied by Borissov, whose results are analysed in a recent number of *La Semaine Médicale*. He made use of Pawlow's method of sham feeding in a dog in which esophagotomy had been performed and a gastric fistula also established. The bitter substances, therefore, did not pass into the stomach, and the reflex effects of their presence in the mouth could be accurately judged. Borissov found that if a little wad of wool soaked in tincture of gentian was put into the mouth immediately before food was administered, a marked stimulant effect upon gastric secretion resulted; but if the bitter was used fifteen to thirty minutes before the meal it was quite inefficacious. It is concluded, therefore, that these substances have the power of rendering gustatory sensations more acute and of exercising a temporarily stimulant effect upon gastric secretion; for this purpose they should be given immediately before the meal in small doses and in the form of tincture (10 to 20 drops) rather than cachets or pills. We may remark upon this that the habit is obviously susceptible of abuse, particularly, when, as is usually the case, some strong alcoholic liquor is used as the vehicle of the bitter. As a matter of fact, such a stimulant action is the real function which is intended to be subserved by the soup which is taken at the beginning of a meal. There is a tendency — even outside the city of London — to consume this in somewhat large quantity; in such cases it tends to be harmful rather than conducive to digestion; but there can be no doubt, on the other hand, that the use of a tablespoonful or two of a hot and sapid fluid at the beginning of a meal is an excellent means of giving the stomach a fair start in the performance of its functions. — *British Medical Journal.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 7, 1903.

Cities.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York	3,785,156	1,184	335	23.39	15.62	3.55	4.14	2.11
Chicago	1,885,000	476	115	21.43	14.07	3.57	6.51	2.10
Philadelphia	1,378,527	420	112	19.51	11.18	2.85	.95	2.85
St. Louis	618,481	—	—	—	—	—	—	—
Baltimore	533,712	148	32	22.97	10.79	2.70	2.03	2.03
Cleveland	437,731	—	—	—	—	—	—	—
Buffalo	357,994	—	—	—	—	—	—	—
Pittsburg	351,745	153	—	39.41	15.03	3.82	3.26	4.57
Cincinnati	335,140	—	—	—	—	—	—	—
Milwaukee	315,307	—	—	—	—	—	—	—
Washington	295,102	—	—	—	—	—	—	—
Providence	191,230	65	15	23.07	4.61	4.61	—	—
Boston	603,168	195	53	26.15	12.82	3.59	6.15	2.56
Worcester	132,044	25	7	12.00	16.00	—	—	4.00
Fall River	115,549	25	13	28.00	20.00	4.00	12.00	4.00
Lowell	101,959	32	8	21.85	9.37	—	3.12	3.12
Cambridge	98,639	24	4	33.33	16.67	—	—	—
Lynn	72,497	22	3	18.18	4.54	4.54	—	13.63
Lawrence	69,766	21	11	38.09	9.52	4.76	14.28	4.76
Springfield	69,389	19	9	26.31	21.05	—	—	10.52
Somerville	68,110	9	1	—	—	—	—	—
New Bedford	67,198	27	9	25.92	18.51	3.70	3.70	3.70
Holyoke	49,286	—	—	—	—	—	—	—
Brockton	44,573	7	2	57.20	—	14.30	—	—
Haverhill	42,104	10	1	10.00	10.00	—	—	—
Newton	37,794	7	—	—	28.60	—	—	—
Salem	36,876	12	3	—	—	—	—	—
Malden	36,286	11	—	27.27	9.09	—	—	—
Chelsea	35,876	8	2	—	—	—	—	—
Fitchburg	35,069	11	5	18.18	9.09	—	—	—
Taunton	33,656	8	1	37.50	—	12.50	—	—
Everett	28,690	8	—	25.00	—	—	—	12.50
North Adams	27,862	5	—	60.00	—	—	20.00	—
Gloucester	26,121	—	—	—	—	—	—	—
Quincy	26,042	4	—	—	25.00	—	—	—
Waltham	25,198	4	1	—	—	—	—	—
Brookline	22,608	—	—	—	—	—	—	—
Pittsfield	22,589	1	—	—	—	—	—	—
Chicopee	21,031	4	2	—	—	—	—	—
Medford	20,962	7	—	42.90	14.30	—	—	14.30
Northampton	19,883	7	1	14.30	14.30	14.30	—	—
Beverly	15,302	4	—	—	25.00	—	—	—
Clinton	15,161	6	1	50 00	16.67	—	16.67	16.67
Leominster	14,806	—	—	—	—	—	—	—
Newburyport	14,478	1	0	—	—	—	—	—
Woburn	14,300	—	—	—	—	—	—	—
Hyde Park	14,175	6	1	33.33	16.67	—	—	16.67
Adams	13,745	2	0	—	—	—	—	—
Attleboro	13,677	—	—	—	—	—	—	—
Marlboro	13,609	—	—	—	—	—	—	—
Melrose	13,600	—	—	—	—	—	—	—
Westfield	13,418	5	1	60.00	20.00	20.00	—	20.00
Milford	13,129	—	—	—	—	—	—	—
Revere	12,722	1	—	—	—	—	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody	12,179	—	—	—	—	—	—	—
Gardner	11,928	—	—	—	—	—	—	—
Weymouth	11,844	0	0	—	—	—	—	—
Southbridge	11,268	—	—	—	—	—	—	—
Watertown	11,077	1	0	100.00	—	—	—	—
Plymouth	10,780	—	—	—	—	—	—	—

Deaths reported, 2,985; under five years of age, 747; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 687, acute lung diseases 405, consumption 322, scarlet fever 15, whooping cough 11, cerebrospinal meningitis 7, smallpox 18, erysipelas 7, puerperal fever 7, measles 10, typhoid fever 77, diarrheal diseases 114, diphtheria and croup 99.

From whooping cough, New York 5, Chicago 2, Philadelphia 1, Baltimore 1, Boston 1, Fitchburg, 1. From erysipelas, New York 3, Philadelphia 1, Baltimore 1, Providence 1, Boston 1. From smallpox, Philadelphia 4, Pittsburg 14. From measles, New York 5, Philadelphia 1, Boston 3, Worcester 1. From scarlet fever, New York 5, Chicago 3, Baltimore 2, Pittsburg 1, Providence 1, Boston 1, New Bedford 1, North Adams 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Oct. 24, the death-rate was 15.9. Deaths reported, 4,610; acute diseases of the respiratory organs (London) 194, whooping cough 45, diphtheria 58, measles 55, smallpox 1, scarlet fever 36.

The death-rate ranged from 4.0 in Hornsey to 30.8 in Tynemouth, London 15.1, West Ham 17.9, Brighton 13.3, Southampton 9.5, Plymouth 11.6, Bristol 12.5, Birmingham 20.6, Leicester 14.9, Nottingham 13.8, Liverpool 18.8, Bolton 18.0, Manchester 15.9, Salford 24.2, Bradford 17.7, Leeds 15 6, Hull 16.7, Cardiff 11.5, Rhondda 19.6, Merthynr Tydfil 21.8, Middlesbrough 24.1.

METEOROLOGICAL RECORD.

For the week ending Nov. 7, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S.. 1	30.09	56	63	49	66	53	60	W	W	7	10	C.	C.	0
M.. 2	30.08	56	66	47	62	46	54	W	W	8	4	O.	O.	0
T.. 3	30.03	58	68	49	65	47	56	W	W	10	10	C.	C.	0
W.. 4	29.87	63	74	52	73	57	65	W	W	11	10	C.	C.	0
T.. 5	29.58	51	64	38	83	78	80	S W	N W	12	14	R.	O.	.26
F.. 6	29.86	35	39	31	86	93	90	N	N	9	10	O.	N.	.13
S.. 7	29.98	35	40	30	84	50	67	W	N W	14	12	F.	C.	.04
Mean	29.93		59	42			67							.42

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING NOV. 12, 1903.

PETTUS, W. J., assistant surgeon-general. Detailed as inspector of unserviceable property in the Hygienic Laboratory. Nov. 12, 1903.

GREENE, J. B., passed assistant surgeon. Granted leave of absence for twenty days from Nov. 15. Nov. 9, 1903.

ANDERSON, J. F., passed assistant surgeon. To proceed to Detroit, Mich., for special temporary duty. Nov. 5, 1903.

TRASK, J. W., assistant surgeon. Granted leave of absence for four days from Oct. 17, 1903, under paragraph 191 of the regulations.

SALMON, T. W., assistant surgeon. To proceed to Philadelphia, Pa., and report to medical officer in command for duty. Nov. 7, 1903.

MASON, W. C., acting assistant surgeon. Granted leave of absence for five days from Nov. 19. Nov. 7, 1903.

OWEN, HENRY, acting assistant surgeon. Granted leave of absence for thirty days from Nov. 8. Nov. 9, 1903.

Achenbach, John, pharmacist. Granted leave of absence for seventeen days from Nov. 20. Nov. 7, 1903.

BOARD CONVENED.

Board convened to meet at Chelsea, Mass., Nov. 12, 1903, for physical examination of an officer of the Revenue Cutter Service. Detail for the board — Surgeon R. M. Woodward, Chairman. Assistant Surgeon W. C. Rucker, Recorder.

APPOINTMENTS.

Thomas William Salmon of New York commissioned (recess) as assistant surgeon. Nov. 7, 1903.

George Neves of Oklahoma appointed pharmacist of the third class. Nov. 13, 1903.

RESIGNATION.

Pharmacist Frank Siedenburg resigned, to take effect Oct. 4, 1903.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING NOV. 14, 1903.

D. N. CARPENTER, Surgeon. Detached from the "Chicago" and ordered home to wait orders.

R. B. CHAPMAN, assistant surgeon. Appointed assistant surgeon with rank of lieutenant, junior grade, from Oct. 28, 1903.

O. DIEHL, surgeon. Detached from the "Oregon" and ordered to the "New Orleans."

M. S. GUEST, surgeon. Detached from the "New Orleans" and ordered to the "Oregon."

H. D. WILSON, surgeon. Detached from the Naval Station, Olongapo, P. I., and ordered to the "Vicksburg."

G. M. MAYERS, assistant surgeon. Detached from the "Vicksburg" and ordered to the "El Cano."

J. M. BRISTER, assistant surgeon. Detached from the "El Cano" and ordered to the "Isla de Cuba."

C. BIDDLE, surgeon. Detached from the "Puritan" and ordered to the "Lancaster."

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a special meeting of the Section for Obstetrics and Diseases of Women in Sprague Hall, Boston Medical Library Building, No. 8 The Fenway, Nov. 25, 1903, at 8 P.M., to consider the advisability of holding meetings during the coming winter for the reading and discussion of papers, etc. Dr. Charles S. Bradley will present a paper on "An Account of the Work, including Obstetrical Technique, at the Lying-in Hospital of the City of New York."

W. H. GRANT, M.D.
Secretary.

RECENT DEATHS.

George Julius Engelmann, M.D, M.M.F.S., of Framingham died in Nashua, N. H., Nov. 16, 1903, aged fifty-six years.

Charles Marshall, M.D., a prominent physician of Huntingdon, Province of Quebec, Canada, died suddenly of apoplexy, on November 13, in New York, where he had just arrived on a visit to some relatives. He was a graduate of the medical department of the New York University, and after studying for some time in Europe, settled in Huntingdon, his birthplace. He was a member of the Medical Board of Governors of the Province of Quebec and was prominent in the Masonic order.

BOOKS AND PAMPHLETS RECEIVED.

Textbook of Operative Surgery. By Dr. Theodor Kocher. Authorized translation from the Fourth German Edition. By Harold J. Stiles, M.B., F.R.C.S. Edin. Illustrated. London: Adam and Charles Black. 1903.

Traité de Radiologie Médicale. Publié sous la direction de Ch. Bouchard. Illustrated. Paris: G. Steinheil. 1904.

Traité d'Hygiène. Procédés Rapides de Recherche des Falsifications and Altérations. Par le Dr. P. Smolensky. Traduction du russe par S. Broido et A. Zagulelmann. Annotée par L. Guiraud et A. Gautié. Illustrated. Paris: G. Steinheil. 1904.

Les Nerfs du Coeur Chez les Tabétiques, par le Dr. Jean Heitz. Paris: G. Steinheil. 1903.

Illinois State Board of Health. Report on Medical Education and Official Register of Legally Qualified Physicians. 1903. Mammalian Anatomy with Special Reference to the Cat. By Alvin Davison, Ph.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

Clinical Talks on Minor Surgery. By James G. Mumford, M.D. The Old Corner Bookstore, Boston. 1903.

The Medical News Visiting-List. Philadelphia and New York: Lea Brothers & Co. 1904.

Transactions of the Obstetrical Society of London. Vol. XLV. For the year 1903. Part III., for June and July. Edited by Amand Routh, M.D., and Herbert R. Spencer, M.D.

University of California Publications. Physiology. The Limitations of Biological Research. By Jacques Loeb.

University of California Publications. Physiology. The Relations of Biology and the Neighboring Sciences. By Wilhelm Ostwald.

Atlas of the External Diseases of the Eye, including a Brief Treatise on the Pathology and Treatment. By Prof. Dr. O. Haab. Authorized translation from the German. Second Edition, Revised. Edited by G. E. de Schweinitz, A.M., M.D. Illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

Quiz-Compends? No. 7. Compend of Gynecology. By William H. Wells, M.D. Third Edition, Revised, Enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

Transactions of the Association of American Physicians. Eighteenth Session, held at Washington, D.C., May 12, 13 and 14, 1903. Vol. XVIII.

The Medical Epitome Series. Normal Histology. A Manual for Students and Practitioners. By John R. Wathen, A.B., M.D. Series edited by V. C. Pedersen, A.M., M.D. Illustrated. Philadelphia and New York: Lea Brothers & Co.

A Treatise on Orthopedic Surgery. By Royal Whitman, M.D. Second Edition, Revised and Enlarged. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1903.

Infection and Immunity, with Special Reference to the Prevention of Infectious Diseases. By George M. Sternberg, M.D., LL.D. Illustrated. New York and London: G. P. Putnam's Sons. 1903.

The Medical Epitome Series. Anatomy. A Manual for Students and Practitioners. By Henry E. Hale, A.M., M.D. Series edited by V. C. Pedersen, A.M., M.D. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1903.

A Text-Book on the Practice of Medicine. Designed for the Use of Students. By James Magoffin French, M.D. Illustrated. New York: William Wood & Co. 1903.

Original Articles.

THE TREATMENT OF DIFFUSE PERITONITIS.[1]

BY B. F. LUND, M.D., BOSTON.

By diffuse peritonitis is meant that rapidly spreading inflammation of the peritoneum which resulted from perforation of the appendix or other viscus, in which the inflamed area is covered with pus or fibrin, and is not walled off by adhesions from the peritoneal cavity. Such a peritonitis may, if it has invaded all the recesses of the greater peritoneal cavity, be called a general peritonitis. A general peritonitis differs in extent and not in character from a diffuse peritonitis. This condition is one which the surgeon is called upon so often to treat, and one in which his methods and results are of so great importance to his patients, that a thorough discussion of the methods is always of vital interest.

Whatever methods are adopted, a large mortality will always attend the surgeon's efforts in those cases of peritonitis which come to him late, with the greater portion of the abdominal cavity invaded by the process and the system overcome by toxemia. Nevertheless, by intelligent methods of treatment, the mortality, even in extensive, if not entirely general, cases of diffuse peritonitis, has been greatly lowered, and it is to some of the methods which in the writer's experience have seemed to contribute to this lowering of mortality that he wishes to call attention in this paper.

The literature of the treatment of diffuse peritonitis is enormous, and methods of treatment which seem diametrically opposed have or had their ardent advocates. One writer advises irrigation; another condemns it because it distributes infectious products through the peritoneal cavity. One advises drainage, another avoidance of drainage, etc., so that to the uninitiated the matter seems to be in a state of apparent confusion. Even as to the point which seems to the writer the most important point of the treatment, *i. e.*, that the infecting focus should be immediately removed, there is still a difference of opinion among surgeons. It is to this point, which seems to him one of vital importance, that the writer would first invite attention.

There can be no question that the peritoneum will absorb or segregate by adhesion a certain quantity of infectious material. But if an indefinite supply is poured into the cavity by a necrotic perforated appendix or ruptured intestine the peritoneum cannot take care of it. A surgeon in a large hospital who has been called upon to treat cases of general peritonitis which have been poorly observed, neglected and have not sent for surgical aid until the entire abdomen was invaded by the process, the intestines paralyzed, and the patient suffering from septicemia, finds it hard to believe that, without the removal of the infecting viscus, the peritoneum can wall off all septic processes. In perforative peritonitis, early or late, the removal of the infecting focus is imperative, as so well stated by Dr. Joseph A. Blake of New York in a recent article on the treatment of diffuse peritonitis: "The advocates of the treatment by rest will concede that the patient will be much better off with the appendix out if it can be done without operation. We have then simply to weigh the dangers of toxemia and the shock of operation against the danger of continued infection, both systemic and peritoneal from the appendix itself, or the escape of its contents."

With a short anesthesia and quick operation the danger of interference is much less than that of procrastination. Dr. A. J. Ochsner of Chicago, the most eminent advocate of the waiting policy in diffuse peritonitis, states that at no matter what stage a case of diffuse peritonitis comes into the hands of the surgeon, in case the stomach is washed out and nothing administered by it, nourishment being kept up by rectal injections, thus keeping the stomach and small intestines absolutely at rest, in a vast majority of instances the process will become walled off, the acute symptoms subside, and the patient can be safely operated upon at a later date. Dr. Ochsner adduces statistics in proof of his contention.

This policy of waiting in acute perforative peritonitis has been tried at the City Hospital, and the writer has occasionally seen a case which exhibited the symptoms of a diffuse peritonitis wall off and quiet down. A more frequent result of this policy has been the progress of the disease to such an extent that the operation had to be done under conditions much more serious than obtained when the case first presented itself. These cases have afforded a comparison of the value of quick anesthesia and operation with a waiting policy. In the former case the patient suffers no shock, but is relieved from the constant influx of septic material from the infected organ. The current of infectious material is started out of the abdomen instead of into it, and the patient is placed on the road toward recovery.

Ten years ago the writer well remembers the position taken by Dr. Worcester of Waltham, at a memorable discussion in Boston, in which he advocated the early operation or as soon as the diagnosis is made, in all cases of appendicitis. He well remembers the controversy that followed, in which several of Boston's most noted physicians and surgeons advocated the policy of waiting for the formation of the abscess and of adhesions before operating. The courage displayed by Dr. Worcester at that time has been rewarded by the adoption of his opinion by the majority of conservative surgeons throughout the country. Experience has proved that a patient with a perforation draining outside the abdomen is much better than if one enclosed within its impermeable walls and free to distribute poison throughout its cavity.

The writer has observed so many cases of appendicitis apparently "quieting down," with

[1] Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital.

a normal temperature and pulse, in which a sudden rise of temperature and an alarming aggravation of the patient's symptoms have proclaimed a perforation or rupture of an abscess previously limited by adhesions, that he is convinced of the dangers of a waiting policy. The dangers of an early operation in which drainage is employed are not much greater than that of the operation in the interval, and many lives which would have been sacrificed by waiting for the subsidence of the acute attack are unquestionably saved.

Where cases are seen early, as they should be, by the surgeon — within twenty-four or forty-eight hours — all will admit that there should be no question of waiting for the interval with its danger of perforation, but that operation should be done at once. In cases seen later, after the process has had a further start, a waiting policy is indicated still less. After the fire has a better start it is still more dangerous to wait before turning the hose on the flames.

Now in regard to the methods of treatment. Granting the importance of immediate removal of the infecting focus, a complete removal of all necrotic tissue is indicated whenever possible. In the first place a complete removal takes the entire source of infection out of the peritoneal cavity, instead of leaving a smouldering focus behind to prolong the period of suppuration and the necessity of drainage. Where the appendix is the source it should always, where feasible, be removed entire. The writer firmly believes that in a case of salpingitis where, as he so frequently has seen, one badly diseased tube is removed and another, which is only slightly inflamed and contains only a little pus, is left behind, because it is considered improper to sterilize the patient, an absolutely wrong policy has been followed. The tube which has been left behind remains as a smouldering focus of infection, and not infrequently becomes the cause, if not of acute peritonitis, at least a chronic peritonitis causing bands of adhesion between the intestines and the pelvic wall. It often becomes acutely inflamed and necessitates a second operation for its removal, an operation rendered much more difficult by the adhesions resulting from the previous operation, and the chronic inflammation. Further, a chronically inflamed appendix stump may be the cause of fresh fibrinous adhesions throughout the peritoneal cavity resulting in intestinal obstruction requiring operation for its relief. A thorough removal, therefore, of the infected focus is necessary as well for the future as for the immediate welfare of the patient.

The second object to be attained after a removal of the infecting focus is a thorough cleansing of the peritoneal cavity and the placing of it under the most favorable conditions for the subsidence of the infection and return to a normal condition.

For this purpose for several years the practice at this hospital has been in the majority of instances in cases of diffuse peritonitis to thoroughly irrigate the peritoneal cavity with deci-normal salt solution at a temperature of 110°. This process the writer believes to be of great importance and value. Through a long glass nozzle of large caliber pushed into all the recesses of the cavity several quarts or gallons of salt solution are introduced, which comes out of the wound with a violent rush and brings out fragments which otherwise would have remained to prolong suppuration and interfere with convalescence. A warm salt solution soothes instead of irritating the peritoneum, and cleanses every portion of it without rendering necessary the removal of the intestinal coils from the abdominal cavity with the shock which accompanies that procedure. A certain amount of salt solution is left behind, which, being absorbed by the lymphatics, increases the amount of fluid in the vascular system. Another portion of the fluid is immediately taken up by the gauze which is used for drainage, and starts a current from the abdomen out into the dressings and aids in removing any infectious material which may not have been washed out during the operation. From every point of view, then, the process of irrigation seems to be a valuable one. The infectious material is not spread by it from one portion of the peritoneal cavity to another, because through the tubes it is carried to the bottom of the pelvis and other peritoneal recesses, and the current is from there out from the wound, not through the wound into the distant portions of the peritoneal cavity. A certain amount of loose fragments of fibrin are washed out by this irrigation, but attached portions must be left behind. The writer believes it wiser to leave them there than attempt their removal. The occasional washing out of a fecal concretion which otherwise would have been left behind is a valuable result of this procedure.

Only a few years ago Dr. Finney of Baltimore advised removal of the intestines from the abdominal cavity and sponging with gauze to remove adherent flakes of fibrin from them, but this process leaves raw bleeding surfaces with lymphatics open for further infection. It also increases the shock of the operation by evisceration and handling of the coils. The writer believes that it is an unnecessary and usually harmful proceeding.

After removal of the infecting focus and infectious products the next question to claim attention is that of drainage. The writer is an advocate of gauze drainage for the following reasons: In the first place, even if only for a few hours before adhesions are formed about the drainage wicks, these wicks by capillarity remove a large quantity of fluid, some of it presumably septic, from the peritoneal cavity. The irritating effect of the gauze causes, immediately after the drainage of the fluid, the formation of adhesions which wall off the infected area from the general cavity and prevent further reinfection of that cavity, and the subsequent formation of local residual abscesses by any infected material which it may not have been possible to remove

at the operation. For the drainage of the pelvis gauze wicks are used, and among them is placed a glass tube passing to the bottom of the pelvis. The glass tube is not of much direct value as a drain. It is removed at the end of twenty-four hours, and is generally found at that time filled with coagulated fibrin. The writer believes it of value, however, in keeping the gauze in the original position in which it is placed, and preventing its becoming entangled by the movements of the intestines, thus possibly producing obstruction. Gauze drainage alone is employed for the stump of the appendix, and is generally sufficient for drainage of the right flank. The wrapping of gauze wicks in rubber tissue, while it facilitates their removal, prevents, in the writer's opinion, the action of the gauze in the production of adhesions, and is a harmful rather than useful procedure. About such a drain, instead of hard and dry adhesions, as in the case of a gauze drain, there form soft and moist barriers. It does not seem to the writer that ease of removal compensates for the other disadvantages of such drains. The tube, as stated above, is removed at the end of twenty-four hours; the gauze drains, if the cases progress well, are removed in about four or five days, being slightly loosened on the second and third days, and on the fourth day carefully removed. If they are removed carefully and slowly, one at a time, an anesthetic usually is not necessary.[5]

Dr. Blake, in his paper quoted above, advocates the abandonment of the drainage, and supports his contention by a series of cases in which the drains were not carried into the peritoneal cavity, but through the wound; or, in other words, he does not close the wound, but allows the peritoneal fluid to flow out through it, carrying his drain, as far as the writer can make out from the description, to the bottom of the parietal wound, but not into the peritoneal cavity. He advocates the use of drainage only in case it has been impossible to remove the necrotic material, and in cases where there is doubt whether all the infectious material has been removed. It seems to the writer that this doubt does exist in a large majority of cases of diffuse peritonitis, and he therefore advocates the general use of gauze as drainage. Gauze drainage, where properly used and supported by tubes, has not in the cases observed by the writer been the cause of intestinal obstruction.

The assistance of abdominal drainage by gravity has been suggested and tried many times. A few years ago in the Johns Hopkins School, elevation of the foot of the bed was suggested after suture of the abdomen, in order that the abundant lymphatics of the diaphragm might take care of what infectious material had been left in the peritoneal cavity. This procedure was quite extensively tried, but was found uncomfortable and attended by, at least, no decrease of mortality, and has been generally abandoned.

The opposite procedure, namely, the elevation of the head of the bed after drainage of the abdomen in order to permit immediate flow of the fluids left after operation into the pelvis, whence they are quickly sucked out by the capillary action of the gauze and tubes, has *a priori* more to recommend it. It was suggested to the writer by Dr. Murphy of Chicago, who stated that his cases of perforative peritonitis were brought to the hospital sitting up in the ampulance, and were kept sitting up in bed in an almost upright position after the operation. The writer tried this procedure in a severe case of general peritonitis on a little boy in the hospital. The greater part of the cavity of the peritoneum was infected. The boy, after the usual operation and appendectomy, was drained by a large rubber tube brought out at the lower end of the wound and kept sitting up in bed by strapping the legs to a Bradford frame, with his back against a head rest. Although the position was somewhat exhausting, the drainage was very free from the wound, and the boy made an excellent recovery. He was allowed to recline after the fourth day. There were no complications in the way of secondary abscesses. The next case, a little girl in very poor condition, with general peritonitis, in which this plan was tried, proved fatal. The position was very irksome to the child, and, although drainage was free, she grew so weak that she had to be lowered in bed.

Since these experiences the writer has confined himself to the elevation of the head of the bed, about one foot above the level, by placing under the head of the bed the blocks which are ordinarily used to elevate the foot of the bed in fractured femur. One or two pillows are also placed beneath the shoulders. This position gives slant enough to the body to allow the fluid to flow from the flanks into the pelvis, and is not exhausting to the patient as is the more complete upright position. The writer believes that where elevation of the head and shoulders is used the incisions in the flank which were formerly not infrequently practiced by him are unnecessary. The cases in which moderate elevation has been practiced, and these included all the cases which have come under the writer's care since last spring, there have been six cases with four recoveries, certainly a favorable showing, although the number is at present too small to prove of value in forming an estimate of the method. The procedure is one that certainly does no harm, and, it seems to the writer, is probably an aid in the treatment of these cases.

In regard to that grave class of cases of general peritonitis accompanied by distention of the intestines, which frequently, when the surgeon is first called to see them, present the appearance of cases of intestinal obstruction, a few words only should be added here. The subject was fully discussed and elaborated upon by the writer in a paper "On the Value of Enterostomy in Selected Cases of Peritonitis," published in the *Journal of the American Medical Association* for July, 1903. In the treatment of these cases, in addition to the measures given above, an incision

about one inch long is made in the small intestine, and the distended coils drawn outside the abdomen as far as possible, emptied of their contents, and two ounces of a saturated solution of epsom salts injected into the lumen. The opening is then closed with a continuous suture of silk or linen thread. After the operation on these patients early attempts are made to move the bowels by enemata of turpentine, glycerine or saturated solution of epsom salts, and if these efforts prove ineffective, the distention of the abdomen increases, and the patient grows worse, a second enterostomy is done. This procedure consists in opening the abdomen in the median line by a short incision, suturing the first distended coil of small intestine which presents to the transversalis fascia, tying in a glass tube connected with a rubber tube, and thus giving the feces a direct opportunity to escape and allowing the paralyzed intestine to recover itself. This procedure has proved effective in certain desperate cases where death was apparently impending after operation for diffuse peritonitis. For the details of the cases and full discussion of the method the reader is referred to the paper given above.

On looking over the records of hospital and private cases for the last four years the writer finds that he has operated upon thirty-four cases of general peritonitis in which all, or at least four-fifths, of the greater peritoneal cavity was involved in the process. Cases of diffuse peritonitis covering only a slight area have not been included. Twenty-three of these cases were due to perforative appendicitis, of which 10 recovered and 13 died, a mortality of 57%. Most of these cases which died were in very poor condition. Four were moribund, the pulse being so weak that no attempt was made to find the cause of the peritonitis; the abdomen was simply opened and drained by a glass tube in the pelvis; two of these operations were done under local anesthesia, as the patient's condition and constant vomiting precluded a general anesthetic; no cases were refused operation on account of the poor condition of the patient.

Of the remaining 11 cases, 4 were due to salpingitis. Of these cases one recovered and three died; one was due to perforating typhoid ulcer, also died; two to rupture of intestine by external violence, of these one died and one recovered; one to perforated gastric ulcer, which recovered; one fatal case due to perforated duodenal ulcer; and one to perforation of the posterior *cul de sac* by a splinter of wood introduced through the vagina. We have, therefore, a total of general peritonitis from all causes of 34 cases with 20 deaths, or 59%.

The writer's time has not been sufficient to analyze the records of the cases of early diffuse peritonitis which he has operated during that time. The mortality of the early cases, however, has been extremely low. One case of perforated typhoid ulcer, which was fatal; one case of perforated gastric ulcer, which recovered; and one case of ruptured intestine, which recovered, are not included in the above list of 34 cases, because the peritonitis, though diffuse, was not extensive enough to be termed general.

Complications in the way of residual abscess formation, etc., have been rare. Intestinal distention, which could be definitely attributed to the pressure of gauze drains has not occurred in the writer's experience, except in perhaps one case, and in this case the cause of the distention was doubtful. One of the cases of general peritonitis died in ten days after the operation of portal phlebitis, the peritoneal process having subsided. The writer's cases of enterostomy previously published have not been included in these cases, as in none of those cases was the peritonitis general at the time of the primary operation. In three of the fatal cases used as the basis of this paper secondary enterostomy was done unsuccessfully, but the patients died from septicemia, and not from abdominal distention. Although the mortality in the above list may seem high, yet it seems to the writer that the showing is on the whole a favorable one, when one considers the lateness of the operation and the desperate condition of a large number of the cases which are brought to this hospital, and although nothing particularly new has been contributed to the treatment, he has felt that, from time to time, a discussion of the treatment of so important and frequent a class of cases is in order.

In view, also, of the recent advocacy of the rest treatment of peritonitis and of the great conflict of oipnion regarding the propriety of most of the methods which experience has proved in the writer's hands to give the best results, he has felt it his duty to present his reasons for his attitude, and if this paper has any influence in establishing procedure of the early removal of the cause of diffuse peritonitis, he will consider his task well worth while.

A CLINICAL STUDY OF ONE HUNDRED AND TWELVE CASES OF MOVABLE KIDNEY.[1]

BY RALPH C. LARRABEE, M.D., BOSTON.

THIS paper is based principally on two hundred and seventy-two patients examined in the Female Medical Out-Patient Department of the Boston City Hospital during a four months' service in 1902. The cases were chosen at random, without reference to symptoms, appearance or other evidences of movable kidney.

The patients were examined bimanually in the dorsal position, and any tumor of the proper size, shape and consistency, which could be pushed back into the normal position of the kidney, was accepted as a movable kidney. A few cases which were doubtful on the first visit were re-examined after a cathartic, but most of the negative cases were examined but once. A few only were examined in the upright position as well as in the dorsal. One or two were rejected

[1] Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital.

entirely because satisfactory examination was impossible.

One or both kidneys could be felt in 112, or 41½% of the 272 cases studied. High as this figure seems, it was exceeded by that of Godard, Danhieux and Werhoogan,[1] who found 46%, while others have estimated that 60 or even 80% of all women have movable kidney. The figure resulting from this study is probably too low rather than too high. It is, of course, possible that a distended gall bladder, a neoplasm or even a mass of feces may have been occasionally mistaken for a movable kidney, but it is not likely that this was the case to such an extent as to seriously impair the results. On the other hand, the negative cases include a number of women so obese that a tumor the size of the kidney could hardly have been felt. Besides, since it was impractical to examine the negative cases repeatedly and in various postures, it is likely that a number of cases were overlooked, for a movable kidney often slips back into position when the patient lies down, and cannot then be felt. In more than one instance the kidney was felt by an assistant, who, in the course of his manipulations, replaced it so that it could not be palpated again until the patient was directed to cough or to stand up. It is surprising how often movable kidney is found if it is looked for, and how often it is overlooked unless especially sought. Therefore figures based on the number of cases diagnosed in a general clinic where especial attention is not being paid to this point are of no significance. While it is probably true that the class of women making up our outpatients is especially susceptible, yet if regularly sought for in patients of the better class the condition will be found so frequently and so regardless of the symptoms for which relief is asked that one becomes very skeptical as to its importance in causing illness and suffering.

The right kidney alone was affected in 98 of the 112 cases. Both kidneys were palpable in 13, the left alone in but one. In this latter case the patient had a tubercular process in the right lung. This is of interest, as the x-ray has shown that in phthisis the excursion of the diaphragm on the affected side is limited to the upper portion of its normal range.[2] It is possible, therefore, that in this case the right kidney did not get pushed down far enough to be felt in inspiration. Where both kidneys were felt the right was the more movable in all but three cases, the left not being the more movable in any.

We may somewhat arbitrarily class the cases according to the degree of mobility as — first, palpable, where the kidney can be felt only in deep inspiration; second, movable, where the organ can be held down during expiration; and third, floating, where the kidney can be pushed freely about. Thirty-nine cases in this series belong to the first class, 49 to the second and 24 to the third. It is a question in how many of the first group the kidney, though palpable, was not abnormally movable. In three of the 39 only the tip of the organ could be felt. In others the whole kidney could be felt, but could not be held down during expiration. In most cases the lower third to two-thirds could be grasped between the examining hands — a degree of mobility that will doubtless be accepted by most as beyond physiological limits.

The frequency at different ages was as follows:

Below 20		21 cases,	of which	17%	had movable	kidney.
20 to 29, inclusive,	92	"	"	45%	"	"
30 to 39 "	65	"	"	52%	"	"
40 to 49 "	40	"	"	43%	"	"
Over 50 "	36	"	"	42%	"	"

This agrees with the results of others in placing the occurrence as being most frequent in young adult life, but there were 5 cases over sixty years of age and one over seventy. It seems probable that, as Wolkow and Delitzin,[3] Mathieu [4] and others state, movable kidney is not rare in old age. The slight decrease in old people may be due to the leaving off of corsets or to the common increase of flesh after the menopause.

Children were not included in this series. In another series, however, of 37 children, 10 boys and 27 girls, systematically examined in the children's room of the Boston Dispensary, there occurred three cases, of which two were very slight or doubtful (one boy and one girl). The third, a girl of seven, had a right kidney which was easily felt, but which did not appear to be causing symptoms. This is in marked contrast to the work of Rosenthal,[5] who was able to feel the kidney in 50% of the girls examined and in 10% of the boys.

But four nationalities were represented in sufficient numbers to justify mention. Of 93 Americans 37% had movable kidney, of 69 Irish 51%, of 41 natives of the British provinces 49% and of 22 Russian Jews 36%.

The conditions of married life do not seem, according to this study, to favor very notably the occurrence of movable kidney, since it was found in 41% of the single women and in 44% of the married and widowed. Notes as to the number of pregnancies were made in 107 of the positive cases, with the following results:

Never pregnant	51
One pregnancy	6
More than one pregnancy	50

It is unfortunate that no record of the number of pregnancies was kept in the negative cases for comparison, as authorities differ so widely on these points. Some, including Senator,[6] state that women who have borne children are especially susceptible, while others, like Hilbert,[7] Kuttner,[8] and Küster,[9] deny any such influence. According to Mathieu,[4] it is commoner in women who have borne children than in those who have not, but commoner in those who have had but one child than in those who have had several. In 36 of the married women here studied, an effort was made to determine the relation of the lesion to the frequency of pregnancy. It was found that 17 of the 36 had been pregnant four or more times at average intervals of less than two years, and that 14 had given birth to six or more children.

The cases here reported show strikingly the effects of emaciation as a causal factor, for 66% of the patients in whom movable kidney was found said that they had lost weight, though such statements were often not supported by objective evidences. The accompanying table, based on the 166 cases in which the notes mentioned the state of bodily nutrition, shows that the condition is much more common in thin people:

Obese	6	had	movable kidney,	27	did not.
Well nourished	34	,,	,,	43	,,
Fairly nourished	19	,,	,,	13	,,
Poorly nourished or emaciated	19	,,	,,	5	,,

The comparative rarity of the condition in the obese may be due in part to the difficulty of feeling the kidney, even though much lower than normal. It will be observed that, although a much greater proportion of the poorly nourished than of the well-nourished showed movable kidney, yet over a half of the positive cases were of the latter class. Indeed, it was striking how many plump, healthy-looking young women possessed movable kidneys.

Trauma was given as probable cause in but one case, the patient dating her symptoms to a fall four years before. She also had a retroverted uterus. In no case was the movable kidney a consequence of surgical operation, all of the six cases showing laparotomy scars being on the negative list. But 4 out of 14 patients who said that they had had operations on the pelvic organs showed movable kidney. Forty-four of the positive cases complained of cough, often slight.

All but nine patients wore corsets or other constrictive articles of clothing. Efforts to classify them according to the kind of corsets or to determine the effects of tight lacing were unsuccessful.

As to the diseases which brought these patients to the hospital, it was noted that conditions accompanied by wasting or impairment of nutrition presented the largest percentage of movable kidney. Fifteen cases of phthisis out of 27 had it; anemia and chlorosis, 12 out of 25; chronic gastric indigestion, 7 out of 12; cancer, 3 out of 5; neurasthenia, 5 out of 11. Movable kidney appeared to explain the symptoms in but 8 of the 112 cases in which it was found. The diagnosis was "enteroptosis" in 8 others. Thus ptosis of the kidney, alone or with other organs, was considered to be the cause of the symptoms complained of in but 14% of the patients presenting the lesion. This agrees closely with the work of Hilbert,[7] according to whom symptoms arise in 15%.

The study of the symptoms is based on all 112 positive cases and on 150 of the negative ones. Taking the symptoms most commonly attributed to movable kidney, we have the following results: First, pain in the back or lumbar region was present in 11 positive and 14 negative cases. Second, abdominal pain in 21 positive and 31 negative cases. Third, throbbing in the abdomen in one positive case (an aneurism) and in one negative case. Fourth, a sensation of a tumor slipping about in the abdomen in 3 positive cases. Fifth, dragging or undefined discomfort in the abdomen in 2 positive cases and in one negative case. Sixth, dyspepsia in 41 positive and 46 negative cases. Seventh, acute crises of severe abdominal pain in 4 positive and 2 negative cases. Eighth, jaundice in one negative case. Ninth, neurasthenia and kindred neurotic conditions in 17 positive and 18 negative cases. Tenth, none of these symptoms in 40 positive and 53 negative cases. The conditions of the bowels are shown in the following table:

Constipation:	Positive cases, 48%; negative cases, 49%.
Diarrhea:	Positive cases, 2%; negative cases, 4%.
Normal bowels:	Positive cases, 50%; negative cases, 47%.

This study, then, does not indicate that any symptom or class of symptoms is particularly characteristic of movable kidney. The only symptom peculiar to positive cases, viz., a sensation of a lump in the abdomen, was too rare to possess much significance. It should be said that these histories were not obtained by asking "leading questions" after the kidney had been discovered; they were merely the symptoms described to the assistants in taking the histories in the usual routine way.

The condition of the abdominal wall was investigated in 57 of the positive cases. It was lax in 14. Separation of the recti muscles was present in 12, and was occasionally so marked that a large mass of intestine and in one case even the artifically distended stomach protruded. It was not always associated with movable kidney, however, being found in 7 of the negative cases, often well-marked. Hernia was noted 21 times in these 57 positive cases. The umbilical was the commonest form — in 17 cases of such a slight degree as to make its classification as a true hernia doubtful. Two were inguinal, both well-marked and right-sided.

The liver extended below the costal border in 30 of the positive cases. In but two of these was the inferior border also lower than normal. None gave the typical picture of "movable liver," with the extreme right border markedly prolapsed and freely movable. The spleen was palpable in 7 of the positive cases. In but one, a case of secondary syphilis, was there anything in the past or present condition of the patient to account for the position of the organ otherwise than as a ptosis of the viscus.

The stomach was investigated with fairly satisfactory results in 50 cases, 36 of which showed no abnormality in the gastric area. The greater curvature was below the umbilicus in 14. In 3 of these the depression of the organ was well marked, while in two, one a cancer of the stomach, there was dilatation. Four out of 6 cases in which the contents were examined chemically showed decrease or absence of hydrochloric acid and two showed normal acidity.

The pelvis was examined in too few instances and the results were too fragmentary to be of great value, vaginal examination being made but 38 times. Eleven of the 18 positive cases

examined had uterine displacements, while they were present in but 6 of the 20 negative cases.

Albuminuria was present in 8 out of 30 of the cases in which movable kidney was present and in but 3 out of 31 in which it was absent. It has been claimed that after palpation in cases of movable kidney some blood will always be found in the urine.[10] Although many of these patients were freely palpated by several examiners, gross hematuria did not result in any known instance. Microscopical examination of the sediment was not made in enough cases to be of any significance. The hemoglobin was estimated in 64 cases by the Tallqvist method, with the following results:

Above 75% in 21 positive cases and 18 negative cases.
Between 50 and 75% in 8 positive cases and 14 negative cases.
Below 50% in 2 positive cases and 1 negative case.

Thus the association of anemia with movable kidney was not a marked feature.

In none of these cases was there any evidence of hydronephrosis, gangrene, malignant disease, severe hemorrhage or other serious complications. Six cases gave histories of periodical attacks of abdominal pain suggesting strangulation or Dietl's crises. Four of the six showed movable kidney. In 3 of these 4 there did not seem to be any reason to think that the kidney was responsible rather than one of the other numerous and more common causes of abdominal colic. One, in fact, was probably appendicitis, one gave a history of "gravel," and one showed evidences of pelvic inflammation. The fourth case had been subject for four years to acute attacks of severe, incapacitating pain, beginning in the right lower abdomen, extending to the hypogastrium and relieved in a few hours by vomiting. The greater curvature of the stomach was two inches below the umbilicus, and hydrochloric acid was reduced. The right kidney was low in the abdomen, freely movable and not fully returnable to its normal position. A swathe gave complete relief for three weeks, after which she was lost sight of. This was the only case in which there was fair reason for attributing the pain to the movable kidney.

Treatment, in the sense of operative or mechanical fixation or support, was considered unnecessary in 87 of the 112 positive cases. Such patients were not informed of the presence of the anomaly. In one case where this was inadvertently done symptoms promptly appeared, the patient complaining at her next visit of "jumping sensations" in the lumbar region. Two women were advised to wear different corsets. Twenty-five were advised to wear swathes. These included some where the symptoms could hardly be attributed to the kidney, the treatment being adopted rather for enteroptosis or to support lax abdominal walls. Either a somewhat elaborate bandage or a simple binder of canton flannel was used. Surgical treatment was not advised in a single instance.

The immediate results can be stated in but five cases. Three of these showed marked improvement, one obtained no relief, and one, a cancer of the stomach, improved temporarily. None of the cases were observed long enough to show the ultimate results.

Some practical inferences, however, may be drawn. If over two-fifths of the women of certain classes have movable kidney one should be very cautious in attributing to such a common anomaly such indefinite symptoms as backache, dyspepsia or neurasthenia — symptoms which, in these cases at least, were as common where no such condition could be demonstrated. When a movable kidney is found it should be borne in mind in treating the case, but unless there is reasonable ground for attributing to it the symptoms complained of, it is best not to use any appliance for its support and not to direct the patient's attention to its existence. The frequency and innocuousness of the lesion, as shown by this and similar studies, would appear to refute the extreme surgical view according to which a movable kidney should be operated on with the object of preventing serious complications. The mortality of the operation, according to Keen,[11] may be as high as 2 or 3%. Of 137 operated cases collected by Watson,[12] there were 5 deaths, 4 of which were not the result of operation. Surely the mortality of movable kidney itself, direct or indirect, is nothing like this. Considering the great frequency of the lesion, complications are rare, especially the more serious ones. Of hydronephrosis and pyonephrosis, but 15 cases were admitted to the surgical wards of the hospital in three years out of a total of 11,435 admissions, including cases arising from all causes.[15] Cancer is too rare to need serious consideration, and its etiological connection with movable kidney is at least doubtful. The acute abdominal crises due to vascular or ureteral obstruction from twists or kinks of the pedicle are rarely fatal. The same may be said of the renal hemorrhages occasionally seen. The cases of the latter condition, collected by Eshner,[13] appear to have been usually independent of renal mobility, and often recovered after operation, even where nothing had been done other than inspection of the organ.

Two women in this series had been previously operated on for movable kidney. In one a nephrorraphy was done, followed, as the organ was not retained in position, by a nephrectomy. Later she was advised to wear a swathe to support the other kidney. She was markedly neurotic, and stated that the symptoms had not been relieved. During the past year she has been in the hospital at least twice, once to be operated on for appendicitis and once for probable peritonitis. The second patient stated that a sinus had persisted for a year after operation, and that the original symptoms were not relieved. As the notes on this case have unfortunately been misplaced, her statements cannot be verified by reference to the original records. A third case seen in the same clinic since the material for this study was collected had been at the Long Island Hospital for floating kidney, major hysteria, kleptomania and retroversion of the uterus.

Both kidneys were sutured through lumbar incisions without marked benefit. Her chief complaint now is pain in the back. She is extremely neurotic and has a well-marked albuminuria. There is severe hyperesthesia of the abdomen and lumbar regions. Neither kidney can be felt. Thus in none of these three cases was the operation, although in all mechanically successful, attended with marked relief of symptoms, and one at least was injured to the extent of being obliged to take care of a sinus for a year.

Nephrorraphy undoubtedly has its place. Where any of the serious complications, such as hydronephrosis or pyonephrosis or severe crises, are present there can be no hesitation. It is justifiable where there are disabling symptoms that cannot be relieved by simpler means, or even where the patient prefers the risk of operation to the discomfort of a bandage. It should be remembered, however, that the temporary use of the bandage may tide a patient over a period of poor health or debility, during which the symptoms have arisen, and that afterwards, when the patient has returned to a normal state of health or has gained flesh, the kidney may cease to cause trouble. In all cases, however, but particularly where the symptoms are predominantly nervous, one should not advise operation unless he can attribute the symptoms with reasonable certainty to the lesion, and in the words of Fischer,[14] "das ist leicht gesagt aber schwer gethan."

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DISEASES OF HOUSE OFFICERS IN HOSPITALS.[1]

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THE appointment of house officers at the Boston City Hospital is made by competitive examination in which physical as well as medical and personal qualifications are considered. The result is a fairly able-bodied set of men of similar habits and training, well suited to show, both in their general condition and in their physical ailments, the comparative effects of severe and confining work on the three main services of the hospital, namely, medical, surgical and pathological.

The records for the past ten years from July 1, 1893, to July 1, 1903, include two years and one month before the present South Department for contagious diseases was established. During this time two months' contagious service in Wards A and E were a part of each house officer's duty, one month as junior and later one month as house physician or as house surgeon.

Until July, 1896, the appointments were for eighteen months, with no vacation. At this time the service was increased to eighteen months and two weeks, thus allowing a vacation of two weeks before the last six months. At this time also the first pathological house officer was appointed, and the service has so continued unchanged, with two men on duty, one as junior for six months and the other as senior for the same time. In 1898 the medical and surgical services were increased to two years.

The work medical is chiefly records, laboratory and the repeated physical examinations of non-infectious (so-called) fever patients. The work surgical is records, surgical dressings, often septic, and operations; the work pathological is with cultures, especially from the contagious department, the examination of pathological tissues and the making of autopsies.

The following table presents a list of the diseases that have occurred during the house services:

TABLE A.

Diseases of House Officers.

July 1, 1893, to July 1, 1895. During this time each house officer served two months in the contagious service. There was no pathological service.

	Medical.	Surgical.
Influenza	3	..
Tonsilitis	1	..
Diphtheria	2	5
Scarlet fever	3	2
Measles	1	..
Typhoid fever	..	1
Gastro-duodenitis	..	2
Acute gastritis	1	..
Appendicitis	1	..
Furunculosis	..	1

Sept. 1, 1895, to July 1, 1903:

	Medical.	Surgical.	Path. From July, 1896.
Phthisis pulmonalis	..	1	2
Pneumonia	1	..	..
Influenza	4	3	..
Tonsilitis	12	8	3
Typhoid fever	..	1	..
Febriculæ	5	..	..
Scarlet fever	1	..	1
Diphtheria	..	1	..
Vaccinia	..	1	..
Gastro-enteritis	2	1	..
Gastro-duodenitis	2	..	..
Acute gastritis	1	..	..
Acute articular rheumatism	1	..	..
Acute otitis media	2	1	..
Furunculosis	1	4	..
Septic hand	..	1	1
Septic thumb	..	2	1
Septic arm	..	2	1
Teno-synovitis	..	2	..
Acute sinusitis (antrum highmore)	..	1	..
Gas poisoning	..	2	..
Appendicitis	1	2	1

The above table does not include a certain

[1] Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital

number of mild cases, not entered on the records, in which house officers were cared for in their own quarters without being off duty.

The first part of the table shows practically no difference, medical and surgical, when both served on the contagious service.

The small number of entries during this time is accounted for by the fact that there were but two men on each service, therefore a man did not go off duty unless actually obliged to do so, as he would thus leave but one man to do the work. Later with three men on duty, to leave the service for a few days would cause injustice neither to the patients nor to his fellow house officers.

The second part of the table shows a greater number of naso-pharyngeal affections and of affections attended by fever on the medical side, and of local septic infections on the two other services. The proportion of naso-pharyngeal affections and of affections attended by fever, medical as compared with surgical, is two to one.

FEBRICULÆ.

These affections have occurred on the medical exclusively, often of not sufficient severity as to require admission to the service. The following record illustrates these cases:

On Oct. 27, 1899, Dr. A. began to have malaise, slight headache and fever. These symptoms continued five days, increasing somewhat in severity. He kept about work until the fifth day, when his temperature was found to be 104. Upon being put to bed and sponge baths given, his temperature dropped to 100. A four-hourly chart was kept and baths given when his temperature was 102.5 or higher. Six baths in all were required. His temperature subsided by lysis, and was normal on the thirteenth day.

During his illness there were no localized symptoms excepting those attending the fever, namely, slight headache, malaise and loss of appetite. The bowels were somewhat constipated. Urine normal. There was no herpes. The Widal test for typhoid fever was made with five negative results. The blood showed nothing abnormal. The highest leucocyte count was 4,300.

In August of the same year Dr. B. was off duty for ten days with similar symptoms and no physical signs. At the same time Dr. B.'s junior was also affected. The two temperatures ran within one-half a degree of each other daily. The highest in each instance was 103, and the course of each fever was eleven days.

In one of these febricular cases the attack was ushered in by a chill of moderate severity; in another there was slight irritation of the throat, but cultures showed no special organism.

All the cases recorded occurred between the months of August and December, the time of the greatest prevalence of typhoid fever.

The successive illnesses of house officers on the same service within eight months' time of pneumonia, cervical adenitis, several attacks of tonsilitis and of febriculæ, suggested as a possible cause the presence of a patent sewer trap in the room occupied by these men successively. The trap was removed, and in the two years following no more cases have occurred.

The repetition of these febricular attacks on the medical side has not been satisfactorily accounted for. Attenuated typhoid fever bacilli as the cause is excluded by the Widal reaction. An infection by a paratyphoid bacillus is a possible supposition. Tests for such organisms should be made in subsequent cases.

It has been suggested that a toxine may be the cause, or some bacterium, as the pneumococcus, in the blood.

TYPHOID FEVER.

It is worthy of note that of the two cases occurring one was in the South Department and the other on the surgical service, while on the medical service, where the wards are nearly filled with such patients during the autumn months, there has been no case of typhoid fever.

TONSILITIS.

This occurred 13 times medical, 8 surgical and 3 pathological. Half of the 24 cases occurred in January, February and March, 4 cases in each of these months. Tonsilitis did not occur more frequently soon after a return from a vacation, nor near the end of a man's service. The organisms, when reported, were streptococci in all cases, usually in practically pure culture after the first or second examinations.

PHTHISIS PULMONALIS.

There is little evidence that primary infection with tubercle bacilli took place after any one of the three men had come to the hospital.

Dr. X. has a stepfather affected with phthisis. He has a history of overwork, and of being under weight before going on duty, where after two months' service in the out-patient department he had pneumonia, and a few tubercle bacilli were found with the diplococci of pneumonia. Later very slight signs were found in one apex. He went to Saranac Lake for one year, and has returned to his service without subsequent symptoms.

Dr. Y. has one sister affected and one brother died of phthisis. He has a history of at least four exacerbations before entering the pathological service, where after nine months' work he had a sudden hemorrhage, and active signs were found in his left apex. He apparently recovered health, went to the Philippines with the army. An exacerbation, with rapid extension of the process, took place. He is now at Saranac Lake.

Dr. Z. had a chronic tubercular process. However, in spite of his known affection, he was admitted to the army, where he died after some years spent in its service.

LOCAL SEPTIC INFECTION.

This occurred almost exclusively on the surgical and pathological services, apparently due

to the condition of the skin rather than to any other cause. Local inflammatory processes such as dermatitis or fissured hands furnished favorable points for the invasion of organisms. In one case a prick from a needle while sewing up a case of general peritonitis caused a local infection and a septic arm. Free incisions were made. Streptococci were found persisting a month later.

In another instance an infection of streptococci occurred in a dermatitis following a sunburn of the arm. The infection was of so severe a character that the house officer was off duty three months.

The use of rubber gloves, both at surgical operations and in handling septic pathological material, has been found to lessen the number of infections. This has been demonstrated most clearly in the pathological laboratory, where hair-follicle infection was almost constant before the use of gloves.

There has been no evidence of an immunity from such infections occurring. With certain organisms, notably the aureus, repeated re-infections have been the rule.

FURUNCULOSIS.

Five cases surgical and one medical. The medical case was a single furuncle with no recurrence. In the four other cases recurrence was frequent for weeks, seriously interfering with work and with the general health.

SOUTH DEPARTMENT.

There have been seventy house officers in the South Department for Contagious Diseases, each serving three months in the diphtheria and three months in scarlet fever wards. A large number of substitutes have served for varying lengths of time.

The contagious cases among house officers from Aug. 31, 1895, to July 1, 1903, were as follows:

TABLE B.

Year.	Diphtheria.	Scarlet Fever.	Measles.	Mumps.	Varicella.
1895 Aug. to Dec. (inclusive)	1	..	..	..	..
1896	2	2	..	..	..
1897	2	..	1	..	..
1898	2	1	..	1	1
1899	4	2	..	1	..
1900	4	1	..	1	..
1901	5	1	..	..	..
1902	6	2	..	..	..
1903	4	1	..	..	..

Other diseases occurring were:

Follicular tonsilitis	5
Cervical adenitis	1
Gastro-enteritis	1
Facial erysipelas	1
Septicemia	1*
Septic finger	2
Nervous exhaustion	1
Influenza	1
Typhoid fever	1*

* Died December, 1901.

There have been no deaths from any contagious disease during this time. One house officer died of septicemia following a streptococcus infection after a burn. One died of typhoid fever after being transferred to the main hospital.

One house officer had measles, mumps and varicella during his six months' service. Three had both diphtheria and scarlet fever, one had diphtheria twice, one had diphtheria and mumps.

Two house officers immunized themselves by injections every month of 1,000 units of antitoxine, one doing this after having diphtheria during the first two months of his service. He had no reinfection. The other did not have diphtheria.

The objection to such immunization is the danger of urticaria or arthralgia following the use of antitoxine; therefore Dr. McCollom has preferred the early use of antitoxine on the first appearance of a sore throat.

Table B shows an increase in the number of diphtheria cases coincident with an increase in the number of house officers appointed in 1899.

The average duration of diphtheria was fifteen days, that of scarlet fever forty-three days.

In 1894, of 12 men, serving four months each in the contagious wards on two successive services, 8 had either diphtheria or scarlet fever. One of the remaining 4 had typhoid fever.

At one time in the South Department of 6 men on service 5 were sick with either diphtheria or scarlet fever.

Five cases of diphtheria occurred in February, 5 in July, 3 each in January, August, October and November, a less number in the remaining months and none in September.

In a contagious service of six months a house officer's chance of having diphtheria is one in two, of having scarlet fever one in seven.

The following comparative table is made from the time-book of the house officers for the past seven years, and includes the South Department:

TABLE C.

Average Number Times Sick per House Officer.

YEAR.	Medical.	Surgical.	Pathological.	Contagious.
1896	.3	.7	1.0	1.5
1897	.3	.7	1.5	1.2
1898	.7	.2	.5	1.5
1899	1.1	.4	1.0	1.5
1900	1.0	.3	1.5	1.3
1901	.7	.8	.5	1.2
1902	.5	.5	.0	1.5

Average Number Days off Duty per House Officer.

YEAR.	Medical.	Surgical.	Pathological.	Contagious.
1896	4.0	7.0	10.0	
1897	2.0	5.0	72.0	
1898	9.0	1.0	45.0	
1899	21.0	4.0	82.0	
1900	18.0	6.0	18.0	
1901	15.0	10.0	1.0	
1902	6.0	12.0	.0	

Average for seven years per house officer, 15.

Average Number Times Sick per House Officer Yearly for Past Seven Years.

Medical.	Surgical.	Pathological.	Contagious.
.7	.5	.8	1.4

Average Number Days Off Duty per House Officer Yearly for Past Seven Years.

Medical.	Surgical.	Pathological.	Contagious.
10.7	6.0	32.0	18.0

This table, although taken from a different source, shows practically the same results as Table A.

A case of phthisis and of septic reinfection on the pathological service explains its proportionately large number of days off duty.

EXERCISE.

Much interest has been shown, both by the visiting staff and by the hospital authorities, that the house officers, who are so much confined to the wards, and who have a large amount of night work to do (except the pathological service), should have means of obtaining proper exercise on the hospital grounds.

However, little has been accomplished of practical value until the year 1899, when two excellent tennis courts were built; and a year later the trustees, aided by generous contributions from the visiting staff, installed two squash tennis courts and equipped them with adequate electric lighting. Shower baths were also supplied. This has offered an excellent opportunity for obtaining sufficient exercise, practically in the open air, with means for a proper bath and rubdown afterwards.

The relation of systematic exercise and the condition of the men at the end of their services in the main hospital, as stated by at least two men of each delegation for the past seven years, is shown by the following statement:

By systematic exercise is meant the obtaining of exercise at least three times a week sufficient in amount to cause free perspiration and followed by a rubdown.

Medical. — Number of men taking systematic exercise, 13. Condition at end of service: good, 12; fair, 1.

Number of men taking occasional or practically no exercise, 29. Condition at end of service: fair, 16; stale, 13.

Surgical. — Number of men taking systematic exercise, 1. Condition at end of service: good.

Number of men taking occasional or practically no exercise, 41. Condition at end of service: good, 6; fair, 12; stale, 23.

Pathological. — Number of men taking systematic exercise, 6. Condition at end of service: good, 6.

Number of men taking occasional or practically no exercise, 2. Condition at end of service, fair.

The other six men were out of doors afternoons and were in fair physical condition.

By " good " is meant general health excellent, weight normal, and fit to repeat service.

By " fair " is meant tired, but able to do his work well.

By " stale " is meant under weight, appetite poor, having nervous disturbances.

Answer to first conditions were: " Felt fine, never better in my life."

Answer to second conditions were: " Pretty tired, but did my work."

Answers to third conditions were: " I was done." " Fagged out." " Didn't get into good condition for months."

Since the establishment of proper means of exercise and baths, of 18 men serving medical, 9 have taken systematic exercise, and their condition at the end of their service was " good." Of the 18 men preceding them only one took systematic exercise, and but 4 reported their condition as " good."

CONCLUSIONS.

The number of cases has been too few and the time too short to warrant any definite conclusions, especially as regards pathological house officers. The records of medical and surgical services, 60 men each, and contagious, 70 men, would indicate that the danger of house officers having pneumonia, phthisis or typhoid fever is very small, one only of these cases occurring medical, and then in an individual of low resistance.

That naso-pharyngeal and febricular affections occur medical in the ratio of 12 to 1 either surgical or pathological.

That local septic infection is the most frequent disease surgical and pathological.

That the danger of infection in the examination of moist cultures and sputum is very slight, as evidenced by no infection occurring in the staining of thousands of smears for the Klebs-Loeffler and tubercle bacillus and the making of the Widal test with the pure culture of typhoid bacilli.

That there is little evidence in the ten years' records that a house officer's general condition is a marked factor in the question of infection by a contagious disease.

That in a six months' service the chance of diphtheritic infection, including mild cases, is one in two, of scarlet fever infection one in seven.

As regards the influence of improved living quarters and facilities for proper exercise upon the health of house officers, Table C shows a marked decrease in the average times sick yearly per house officer medical, where 50% of the men have taken systematic exercise, from 1.1 in 1899, the year following the increase of service to two years, to .5 in 1902, and in the days off duty for sickness from 21 to 6. The decrease is more marked pathological. On the surgical service, where there has been practically no systematic exercise, the averages are nearly the same.

The generally improved physical condition of house officers is a matter of comment.

It should be urged upon house officers that the sense of fatigue occurs most often in the hospital as the result of nervous tension and indoor

air rather than of muscular exhaustion, and is therefore relieved by proper exercise and baths and the reasons offered for insufficient time for systematic exercise are plausible rather than real.

UNCLEAN MILK, BOVINE TUBERCULOSIS AND THE TUBERCULIN TEST — THEIR RELATION TO THE PUBLIC HEALTH.*

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(Concluded from No. 21, p. 567.)

FROM the drop of milk remaining in the tube after the inoculations were made, direct smears upon cover slips were prepared which showed, upon examination under moderately high power, many germs, both micrococci and bacilli. Although careful search for tubercle bacilli was made in every sample of milk examined, they were found in very few cases only. Right here, it may be well to remark that, contrary to the books, it is no easy matter to demonstrate tubercle bacilli in milk even when we are well satisfied that the milk is infected. Gehrman has reported that thorough search failed to reveal the germs in milk from cows of the herd belonging to the Hospital for Insane at Kankakee, Ill., proven to be tubercular and where culture experiments were successful in cultivating the germs from the milk samples. When I state that all of my samples were taken from popular dairies which supply a large clientele, I think that you will agree that such milk is unfit for food. Bacteria are always present in milk unless it is drawn from the udder under sterile precautions, and milk can be contaminated in various ways, viz., from the udder direct, by the hands of the milker, dirty vessels, hay dust or by the water which is sometimes added by the thrifty milkman. "The transplantation of diseases to new fields is characterized by their aggravation. Microbes, like other vegetables, grow best in virgin soil." From contamination with diseased matters, from affected persons and premises, milk may be the means of carrying and spreading many of the most destructive diseases of man and domesticated animals, such as diphtheria, typhoid, scarlatina, cholera, anthrax, foot and mouth disease, glanders and tuberculosis, and the published results of several investigations have shown that the recognized dangers attending the consumption of raw milk exist in butter and cheese. Bovine tuberculosis is communicable to horses, cattle, sheep, swine, dogs, cats, guinea pigs and rabbits. That the diseases above mentioned may be communicated from lower animals to man and from men to lower animals has been conclusively demonstrated so many times that the bare statement of the fact seems almost superfluous, but there are those, whose statements have weight in some quarters, who will still deny these statements. While, as it seems to me, nothing has been more clearly shown than the practical identity of human and bovine tuberculosis, the infectiousness of milk from tubercular cows, and the efficacy of the tuberculin test as a diagnostic agent, it has remained for Koch [39] to deny the existence of proofs of the infectiousness to humans of milk from tubercular cows, and the infectiousness of human sputum to cattle, etc.

Arrayed against such reactionary statements as this, is the immense amount of published matter from careful, painstaking scientists filling the medical press and accessible to every one — examples of which are incorporated into this article. The science of our forefathers was founded upon empiricism — upon experience alone — and the argument from which there was no appeal, was, "I find, from experience." Then came a new era, wherein science was based upon the laws of chemistry and the demonstrations of physiology. Vague and uncertain methods were changed to clear and positive knowledge and the argument of experience was overthrown by the evidence of the microscope and the test tube. Cipollina [40] reports that a monkey fed with bovine tubercle bacilli cultures contracted tuberculosis with no primary lesions apparent in the gastro-intestinal tract. On the other hand, inoculation of a calf with human bacilli resulted negatively. Although these tests are so limited, yet he thinks that they suggest that Koch's assertions in regard to bovine and human tuberculosis have led to researches which have established that the bovine bacillus is more virulent for both man and animals than the human tubercle bacillus. So in this case, we know that bovine tuberculosis can be transmitted to other animals and vice versa, by the facts produced by the laboratory work of many observers.

The committee on Animal Diseases of the American Public Health Association which met in Buffalo, N. Y., in 1901, presented a report, "The Relation of Bovine Tuberculosis to the Public Health," which was clearly opposed to Koch's principal assertion that the case was not proven and cites [41] twelve cases of human infection with bovine tuberculosis. Many experiments are now in progress in various parts of the world which will bring additional evidence to bear upon the question. In this connection it is reassuring to find that the British Congress on Tuberculosis not only did not accept the doctrine, but declared that "medical officers of health should continue to use all the powers at their disposal and relax no effort to prevent the spread of tuberculosis by milk and meats." In this conclusion I most emphatically concur. As long ago as 1877, before the bacillus of tuberculosis was described, Birch-Hirschfeld called attention to raw cow's milk giving rise to diseases in children corresponding to certain forms of scrofula.[42] In the *British Medical Journal* Rowland has called attention to milk, butter and cheese as carriers of typhoid fever and cholera. Steyer and Konel [43] have reported several cases of typhoid fever which were traced to

* Read at annual meeting of the Illinois State Medical Society, Chicago, Ill., May 1, 1903.

butter as a source. It has been repeatedly shown that when the bacilli of hog cholera are placed in sweet milk they will appear in butter and buttermilk in numbers large enough to destroy experiment animals when inoculated with a very small portion of either. It has also been shown many times that when certain bacteria have made their way into milk or butter they remain alive and virulent for a considerable length of time.

Lafar [44] found tubercle bacilli alive and virulent after they had been in butter one hundred and twenty days. Laser [45] found tubercle bacilli, cholera and typhoid germs in a like condition after a week's stay in butter. Moore and Dawson [46] showed that tubercle bacilli remained virulent in butter for more than ninety days and a guinea pig inoculated with a piece of butter the size of a pea died of tuberculosis ninety-seven days after its infection. Although the number of reported cases of acute infectious diseases in which the contagion was introduced through *butter* is not large, it is enough to show the possibilities, and in view of this evidence, a careful inquiry into the character and management of milk used for this common article of food is of vital importance, and by sterilizing milk in the dairies and creameries one of the channels of infection would be closed.

Ostertag [47] has shown that there is much tuberculosis among swine in certain parts of Germany where they are fed upon material from the creameries. And in certain parts of this country the more enterprising breeders refuse to feed their cattle upon the skimmed milk of the creameries and the slime of the separators unless it has been sterilized by heat. Huesinger has reported anthrax in man produced by drinking the milk of a cow affected by this disease. Nocard has found anthrax bacilli in the udder of a cow examined immediately after death. Klein has stated that in milk cows afflicted with diphtheria the lesions are sometimes located in the milk ducts and then the bacilli are carried directly into the milk. West [48] reported that two children of a man named Bridges died of tuberculosis due to drinking the milk of a cow which was found, when killed, to be the subject of extensive udder tuberculosis. Five more of the Bridges children were suffering from pulmonary tuberculosis. The Royal Commission on Tuberculosis [48] reported experiments in which swine, guinea pigs and rabbits were fed upon uncooked milk and that tuberculosis was thus caused in a very large per cent of the subjects used. Investigations reported from Massachusetts [49] show that milk from tubercular cows may contain the germs of disease even when there is *no* lesion of the udder.

Taylor observed [50] several cases of scarlatina which occurred in the home of a milkman whose wife milked the cows — the milk being supplied to twelve families in the city. In six of these families cases of scarlatina occurred in rapid succession at a time when the disease was not epidemic and without any communication having taken place between those that became infected and the person who brought the milk. Sternberg [51] says that a common mode of tubercular infection, especially in children, is probably by way of the intestinal glands from the indigestion of milk from tubercular cattle, and that such infection will occur has been proven by experimentation upon the lower animals. Von Hessling has published observations concerning the development of moulds in milk which showed that the milk could be so permeated with the germs as to poison the hot coffee to which it was added in small quantities. Wende [52] reports the occurrence of fifty-six cases of scarlatina in children of twenty-seven families upon the route of one milk dealer two of whose family were suffering from the fever. Eyre [53] reports an examination of milk in an epidemic of diphtheria among the inmates of a large school receiving its milk supply from one source and shows that the typical diphtheria germs were found in the milk. Kauthack and Sloden [54] reported a series of observations of the milk from sixteen dairies wherein the milk from nine caused tuberculosis in guinea pigs inoculated with it. Hertwig and Jacob,[55] Bollinger [56] and Schneider [57] have all demonstrated the infectiousness of milk from cows suffering from the foot and mouth disease (Aphthæ epizootica), in a series of experiments upon themselves and others. Dinwiddie,[58] in reporting a long series of experiments as to the relative virulence of human and bovine tuberculosis, finds that, for cattle, bovine tuberculosis seems to be more virulent. For pigs there seems to be no difference, both producing infection. Sheep were highly susceptible to infection from human tuberculosis and the disease was similar to the naturally acquired tuberculosis of cattle. Still,[59] reporting 769 autopsies of children, stated that intestinal tuberculosis existed in 52% of the cases he examined and that 71% of the tubercular cases were under the age of four years and that 43% of the 71% were in children younger than two years of age, the primary lesion in every case being in the digestive tract. Nicolas and Lesieur [60] reported the results they obtained by causing young fish to eat sputum known to contain tubercle bacilli. After seven months the fish were killed and bacilli found in every organ of their bodies. The muscular portions were fed to guinea pigs and in the nodules and abscesses which formed in the bodies of the pigs the tubercle bacilli were readily demonstrated. Brush [61] stated that the annual loss in New York due to deaths from tuberculosis exceeded the whole cost of the government. In this matter of tuberculosis being contracted by human beings from infected milk, I may say that the whole subject of tuberculosis is of such propertions and the menace to public health from this fearful disease of such magnitude that I doubt if more than a few of us realize the actual conditions as they now exist.

That tuberculosis is not decreasing can be readily seen from the following quotations from

the mortality statistics of the Chicago Department of Health.[62] Of the total mortality in 1851 4½% was due to pulmonary tuberculosis, and in 1896 it had risen to 10%, or more than twice as many. The death-rate per 1,000 has increased from 12 in 1851 to 14¼ in 1896. The total number of deaths from tuberculosis of all kinds in 1879 was 977 and had increased to 2,667 in 1896. Of course, during this period the population had increased very rapidly, but the annual death-rate from tuberculosis had also increased from 11.34% of the total mortality to 11.46 of total mortality — and again, while the annual death rate from all causes had dropped from 17.52 per 1,000 of population in 1879 to 14.36 in 1896, the mortality rate of tuberculosis in all forms had actually increased as above shown. The general verdict of the Tuberculosis Congress at Berlin[63] is that "tuberculosis is not hereditary; that the remedy lies in prevention more than cure; and the more healthy the surroundings the more rare the disease." The movement inaugurated by the Congress of Berlin has been carried on by many American cities, and recently, in Chicago, was founded the Illinois Society for the Prevention of Tuberculosis.[64] The fight will not be directly against the bacillus of tuberculosis but the physical conditions of the race. Improvement in sanitary arrangements — relief from overcrowding, and abundant and pure water supply for cattle and swine as well as man, will do more to eliminate this dread disease than tons of antiseptics and serums. In the early stages of tuberculosis of cattle the symptoms are not always plain. A short, dry cough is present and sometimes very noticeable after active exertion. The animal becomes poor, the coat rough, and the eyes sunken. Sometimes tenderness and pain are evinced when the side of the chest is touched and the normal sound of the lungs is changed. In cows, nymphomania frequently accompanies tuberculosis. Medical treatment is useless; the diseased animal should be slaughtered and the stables thoroughly cleansed and disinfected.

Grange[65] states that he has met many cases which have convinced him most emphatically that tuberculosis can invade an animal most extensively and yet the disease cannot be diagnosed by physical examination. He mentions this to impress the value and importance of tuberculin as a test. The description of this remarkable substance was first given to the public about ten years ago, at which time it was thought to be a curative agent for tuberculosis. It did not, however, do what was expected and was abandoned as a cure. Tuberculin is now recognized by competent critics the world over as the most safe, reliable, and practical mode of diagnosing tuberculosis in early and late stages which is in possession of mankind.[66] The application of the tuberculin test has proved so accurate in diagnosing the disease that the United States Veterinary Association in September, 1896,[66] adopted, among others, the following resolutions:

(1) Tuberculosis in cattle and man is identical. (2) Germs of tuberculosis appear in the milk of tubercular cows. (3) Tuberculin furnishes incomparably the best means of recognizing tuberculosis in living animals, and *properly* administered, is harmless to healthy animals and is exceedingly accurate. A series of tests were made in Berlin[67] to ascertain whether, in the absence of symptoms or any external sign, tuberculin could be trusted. The result proved that it was accurate even in animals seemingly perfectly sound. It has been objected that tuberculin decreased the flow of milk in the animals treated, but any temporary decrease is offset by a compensatory increase, and in most cases there is no change.[68]

Tuberculin is a solution in glycerine and water of the products of the growth of the tubercle bacilli upon artificial media and the contents of their cells.[69] The fluid upon which the bacilli are allowed to grow is an extract made with distilled water from perfectly fresh meat. One pound of meat is used to a liter of water, to which is added 1% of peptone, ¼ of 1% of salt and 7% of glycerine. This solution is heated to boiling, filtered and placed in sterilized flasks and subjected to fractional sterilization. The inoculation of the media is accomplished by taking up on the end of a platinum wire a small mass of tubercle bacilli growing on agar and obtained originally from an animal that has died of tuberculosis, and transferring it to the sterile flasks and causing it to float on the surface of the liquid. The inoculated flasks are then placed in the incubator and kept at a constant temperature of about 98° F. After about a week or ten days the growth can be seen spreading in all directions and finally the surface of the liquid will be covered with a layer of tubercle bacilli. When this is noted the flasks are carefully shaken so as to cause most of the growth upon the surface to sink to the bottom of the flask. From a small particle left upon the surface a new growth is developed which should be shaken down as the first was and a third growth allowed to form. This process requires six weeks to two months or more and the contents of the flasks are then in condition for the preparation of the tuberculin. When the cultures have grown sufficiently the flasks and their contents are taken from the incubator and at once placed in the sterilizing oven and kept at a temperature of 125° C. until they begin to boil. In this way the germs are killed and the material may then be filtered without any danger to the workers. After the sterilization, the contents of the flasks are once more boiled and filtered. This filtrate is then evaporated and concentrated to any desired volume, as a rule ½ of the original quantity. Instead of sending out this concentrated tuberculin, it is diluted to such a strength that 2 cc. is a suitable dose for an animal of 1,000 pounds weight; and to accomplish this, there is added to the concentrated solution glycerine equal to 25% of the original culture liquid — this is then diluted with ¼ of 1% carbolic acid so that the

volume of the tuberculin is usually equal to one fourth more than the original quantity. In practice, it has been found that healthy animals do not give reactions with large doses of tuberculin and that tubercular cattle do not show a higher reaction with large doses than with small doses of tuberculin. As will be readily seen from this description of the manner of preparing tuberculin, there is not the slightest possible danger of infecting animals or men with tuberculosis by the use of tuberculin. Again, there is no danger of injuring healthy animals even with quite large doses of tuberculin, as it is apparently very readily eliminated in the faeces and urine. When the tuberculin is to be used upon dairy cattle, a test of the same herd should be made at least once every six months.[68] The regulations prescribed by the Bureau of Animal Industry for the use of tuberculin in testing cattle are as follows: [71]

"To those who have large herds or lack time this shortened course is recommended:

(1) Begin to take the temperature at 8 A.M. and continue every two hours until 10 P.M. (2) Make the injection at 10 P.M. (3) Take the temperature next morning at 6 or 8 o'clock and every two hours thereafter until 6 or 8 P.M. (4) Each adult animal should receive 2 c.c. of the tuberculin as it is sent from the laboratory. Yearlings and two-year-olds should receive 1 to 1½ cc. according to size. Bulls and very large animals may receive 3 cc."

The injection is made beneath the skin of the neck or shoulders and, to guard against complaint and to eliminate possible sources of error, the hair should be closely clipped from the site of the injection and the skin scrubbed with hot water and soap and a 5% alcoholic solution of carbolic acid before the injection is made. The animal should not be turned out, but fed and watered in the stable and the time of watering and feeding noted. There is usually no marked swelling at the seat of injection, but there is, now and then, uneasiness, trembling and the passage of softened dung. There may be also slight acceleration of the pulse and of the breathing. If the animal is diseased, from six to eight hours after the injection is made the temperature begins to rise from the normal, which in cattle varies from 101° to 102° F., and should continue to rise until 105° to 107° has been reached. A rise of 2° above the normal is to be regarded as good evidence that the animal is tubercular and for any rise less than this, a repetition of the injection after three to six weeks is highly desirable. Dairy herds once found free from disease should not be herded with new animals that have not been tested and found sound.

In conclusion, it would seem that the administration of tuberculin should always be conducted under experienced direction. It is an invaluable test, and by its use it is certainly possible to reduce very materially tuberculosis among cattle and, maybe, to eventually exterminate it. So, let us insist that the public be provided with pure, healthful milk of the same high standard of quality, cleanliness and uniformity demanded by discriminating people in other food products.

In closing, I desire to acknowledge the assistance rendered by the references in the appended list and from which I have liberally quoted.

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New Instrument.

A TABLE FOR OPERATIONS UPON THE KIDNEY THROUGH THE LUMBAR INCISION.[1]

BY JOHN H. CUNNINGHAM, JR., M.D., BOSTON.

To reach the kidney through the lumbar incision, the patient is placed on one side and canted slightly forward so as to expose the region to be attacked.

Two forces will aid the operator in exposing and delivering the kidney into the loin. The first, and perhaps the most important, is a force directed toward increasing the space between the crest of the ilium and the lower border of the ribs. The second is a force applied from in front at the proper height and level to exert pressure upon the anterior surface of the kidney, and carry it backward and upward against the field of operation.

These two forces are important in kidney operations through the lumbar incision because of the anatomical situation of the organs. In brief, the kidneys are situated in the posterior part of the abdomen, imbedded in areolar tissue. They are post-peritoneal, not firmly fixed, but held in position by the peritoneum, areolar tissue, perirenal fascia and the renal vessels. They lie on a level with the bodies of the last dorsal and first two or three lumbar vertebræ, the right a little lower than the left.

[1] Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital.

From a posterior aspect, the kidneys are under cover of the eleventh and twelfth ribs and the lower border of the diaphragm. About one-fifth of the left and a little more of the right kidney extends below the twelfth rib and the lower border of the ligamentum arcuatum internum of the diaphragm, as it stretches across from the last rib to the transverse processes of the first and second lumbar vertebræ.

Thus a *direct* avenue to the kidney, without cutting away parts of the last two ribs, or without the risk of opening the pleural cavity, is impossible.

The kidney must therefore be attacked through the space between the lower border of the ribs and ligamentum arcuatum internum and the crest of the ilium.

The width of this space is about two fingers' breadth in the male and a little more in the female. Normally, about the lower fifth of the kidney occupies the upper part of this space, but when the organ is freely movable or enlarged it may occupy a greater area.

To increase the width of this space, the patient is usually placed on one side over sandbags or an Edebohl air cushion. Either of these, being placed just above the crest of the ilium, acts as a fulcrum, partially uncovering the kidney and widening the space by lifting the lower border of the ribs upward.

The position, however, is an unsteady one, and usually requires two assistants other than those engaged in the operation.

With the patient in the desired position there is a tendency for the kidney in question to fall forward and toward a median line. Therefore the second force must be applied, that is, pressure from in front on the anterior surface of the kidney, so that the organ is forced upward and backward against the field of operation.

The objections to doing kidney operations upon the Edebohl air cushion or upon sandbags are that too much help is required to maintain the position; that the force exerted upon the anterior surface of the kidney must be manual, and is, therefore, often misdirected and seldom constant; that the full limits of the space are seldom attained, and that the increased number of assistants required to maintain the position multiplies the opportunities for faulty asepsis.

With the view of avoiding the objections to which the methods at present in use are open, as stated above, the writer has devised a table to hold the patient in the desired position and at the same time exert the two necessary forces, thereby doing away with assistants other than those directly connected with the operation.

The table is practically a double inclined plane. It consist of an upright base, 10 inches high by 20 inches wide, and is 2½ inches thick except at the top, where it is a little less, as the edges are rounded. On top of the upright there are two series of three holes, each series 2, 3 and 5 inches respectively from either end. (A, Fig. 1.)

The holes are bored at an angle of 30° and are 3 inches deep by 1¼ inches wide, and into any one of these may be fitted a stake of wood, which rises 7 inches above the surface. (B, Fig. 1.)

There are two inclines, which are fastened to either side of the upright by hooks and rings at a distance of either 3 or 5 inches from the top.



(C, Fig. 1.) The larger incline is 25 inches long by 20 inches wide, and the smaller 18 inches long by 20 inches wide.

The apparatus may be put on any table.

The stake is placed in one of the holes of either series, according to the side to be operated upon. Unless the patient be corpulent it is best placed in one of the holes nearest the center.

In the majority of cases the inclines should be fastened to the upper rings; but there are occasional cases where the patient is so large that the inclines must be suspended from the lower rings in order to open the space to its full extent.

One folded sheet placed on the upright and another partially opened and made to extend from the upright over the stake and inclines will be sufficient padding.

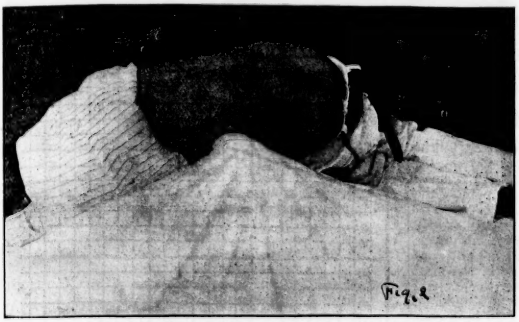
Having arranged the stake, inclines and padding, the patient is placed upon the table so that the upright is just above the iliac crest and the abdomen snug against the stake. That the upright be just above the iliac crest and the patient close against the stake is all-important, because in this lies the success of obtaining the action of the two forces before mentioned.

The legs, which are on the long incline, should be flexed. This forces the patient still more firmly against the stake, increasing the pressure upon the kidney, and forcing it upward and backward against the field of operation. It also makes the position steadier. (Figs. 2 and 3.)

If the patient is properly placed upon the table, the space is opened to its full extent, and the tissues in the field of operation are on the stretch.

After the incision is carried down to the perirenal fascia the kidney and its surrounding tissue tend to bulge into the wound, and the excursion

of the organ is found considerably lessened. After the perirenal fascia is opened, a movable kidney without adhesions is forced out of the wound on to the loin with no other aid than the weight of the patient's body against the stake.





If, as occasionally occurs, the organ is adherent to the surrounding parts, it does not present outside the wound without aid; but is, however, more easily delivered on to the loin because of the properly directed force from in front.

There is no tendency for the kidney to fall back into the wound after being once delivered unless the patient be rolled away from the stake, when it will quickly disappear deep below the surface. It will reappear, however, by allowing the patient to fall back upon the stake.

In most lumbar renal operations it is very desirable to be able to deliver the kidney through the outer wound and to keep it on the loin during some, at least, of the succeeding steps. The present device facilitates inspection and palpation, economizes assistance and simplifies what is at best a somewhat difficult operation.

No post-operative discomfort or lameness of the part has been observed in the limited number of cases in which the table has been employed.

The table affords certain minor points of advantage. In operations upon both kidneys, as, for example, double decapsulation, the patient may be placed face downward with the front of the abdomen resting upon the upright, so padded as to open the lumbar spaces of both sides and force the kidneys back equally well, if not better, than sandbags or the Edebohl air cushion. Also, it does not sink into the whole upper part of the abdomen and press upon the diaphragm as does these other two means. Thus the excursion of the diaphragm is not interfered with and the patient's breathing is therefore more easy.

In gall-bladder operations, and also in laminectomy, the table may prove of considerable service; in the former by affording a means of getting under the ribs, and in the latter by maintaining a firm position and making more prominent the area to be attacked.

Clinical Department.

A CASE OF POST-TYPHOIDAL MYOSITIS OF THE RECTUS ABDOMINIS.[1]

BY DAVID D. SCANNELL, M.D., BOSTON,

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THIS case, which is reported through the courtesy of Drs. M. F. Gavin and J. B. Blake of the Boston City Hospital, is, so far as I can discover, unique in the records of the subject up to the present time. It is unquestionably worthy of being placed on record, not so much, perhaps, for its singularity as for its importance in making one more addition to the already large list of differential possibilities in abdominal diagnosis.

REPORT OF THE CASE.

D. C., male, aged nine, Italian, entered the Boston City Hospital May 20, 1901, and was assigned to the medical side with a diagnosis of typhoid fever. (Inasmuch as the main interest of the case lies in its surgical aspect, the medical history will be only briefly considered.)

There was an indefinite history of headache, malaise, loss of appetite, abdominal pain and slight diarrhea for nine days prior to entrance. On physical examination the diagnosis of typhoid fever was readily made, the positive Widal and low white count confirming the clinical opinion. The patient was thought to be entering on the second week of the disease.

The boy's illness was a severe one, being attended in the first week of his stay in the hospital by seven hemorrhages, all of moderate severity. Nine days after entrance there appeared an eruption on his abdomen, legs and but-

[1] Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital.

tocks, passing through the stages of papules, vesicles, pustules and crusts, and occurring in crops. Diagnosis of varicella was made.

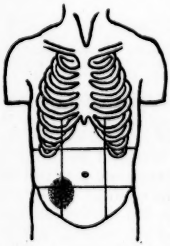
Twenty-seven days from the time of admission another complication in the form of furunculosis occurred, appearing mainly on the anterior abdominal wall, upper thighs and buttocks. Cultures from these showed staphylococcus pyogenes aureus and streptococcus pyogenes; no bacillus typhosus.

Twelve days later there developed a right ischio-rectal inflammation with considerable induration, for which the patient was transferred to the surgical side. Five days later an incision was made and a small amount of pus evacuated. Culture showed mixed infection; no bacillus typhosus. The local inflammation rapidly subsided, and, on July 22, a little over two months from the time of entrance, the boy was discharged well.

Five days later the patient was brought back to the hospital, his interval history having been as follows: On the day after discharge profuse diarrhea, with a small amount of blood in the stools; slight general pain in the abdomen, most marked in umbilical and hypogastric regions; on the day following, several chills and slightly increased hypogastric and right iliac pain; no fever, nausea or vomiting. From this time until his entrance to the hospital there was a steady increase in the local pain; occasional chills and constant fever; occasional nausea and vomiting; slight constipation. It should be noted that during this entire time the boy had been confined to bed; there was no account of heavy straining or sudden forcible movements such as might come from unusual exercise.

Physical examination on entrance: Temperature, 100.2°, pulse, 134 (fair volume and tension); boy looked sick and anxious; tongue coated; dorsal decubitus with thighs flexed on abdomen; chest negative; front of chest and abdomen presented many small crusted areas from previous furuncles.

Abdomen slightly distended; involuntary spasm more or less general but especially marked in lower right abdomen and hypogastrium; tympanitic except in this same area, where it was dull to percussion. Exact palpation because of the spasm and excessive tenderness was impossible, but there was to be felt, notwithstanding, a fairly definite mass occupying area figured in diagram. Movements of the diaphragm and extension of the thighs caused increased local pain. In some respects the sensation on palpating suggested a full bladder, somewhat deviated to the right. No rectal examination was made.

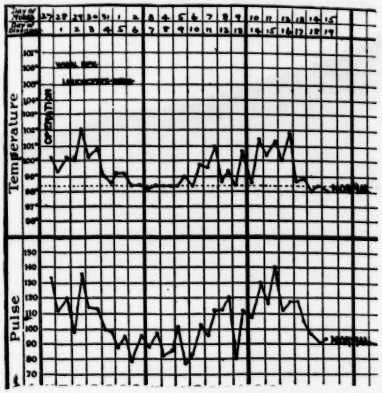


During the making of the physical examination the patient vomited several times; vomitus not significant. Widal negative; urine normal.

Entrance treatment (in the form of a high turpentine enema) effected no change in the abdominal condition, nor in the subjective symptoms of the patient. The diagnosis of acute perforative appendicitis, with abscess formation, seemed a reasonable one, and, in view of the boy's apparently septic condition, immediate operative interference was decided on.

Under ether, with the abdominal muscles relaxed, the question of a full bladder again strongly suggested itself; catheterization resulted in nothing; muscle-splitting incision by Dr. Blake over McBurney's point. The peritoneum showed no injection and the appendix was found to be normal. Exploration of the intra-abdominal surface of the anterior belly wall revealed an ovoidal, indurated, non-fluctuant, extra-peritoneal thickening of the right rectus muscle in its lower third, extending from just below the umbilicus to just above the symphysis pubis. The upper limit of induration was fairly sharply defined by the semilunar fold of Douglas. In the immediate neighborhood of this swelling of the rectus there was apparently a slight involvement of the transversalis and internal oblique muscles. The appendix was removed and the wound closed with layer sutures. No steps were taken at the time to make a second incision into the indurated mass for the purpose of making a histological and bacteriological examination. It is a source of regret that this was not done.

July 29 (second day after operation). No improvement in any respect, the abdominal condition remaining as at time of entrance. Reference to the chart is of interest.



Aug. 2 (sixth day). Operation wound healing perfectly. Despite the drop in pulse and temperature, the spasm, induration and tenderness still persist in lower right abdomen.

Aug. 6 (tenth day). Induration slightly diminished; spasm and tenderness unchanged, however; general condition excellent; wound firmly healed.

Aug. 9 to 12 inclusive (thirteenth to sixteenth day). During this period almost a complete duplication of the clinical picture as presented at the time of admission: acute abdominal pain, involuntary spasm, dullness to percussion and palpable mass in right lower quadrant. There is no obvious cause elsewhere in the patient for the marked rise in temperature and pulse.

From this time on there was a progressive diminution in the parietal induration, until finally by August 20 (twenty-four days after the operation) it had completely disappeared; there was a coincident disappearance of symptoms; on August 23 (twenty-seventh day) the boy was discharged well and has remained so since.

Myositis as a complication or sequela of typhoid fever is a fairly well recognized condition, although its occurrence must be regarded as rare. Reference to the various works on the practice of medicine and surgery throws almost no light on the subject, the great majority omitting even its mention, and the few giving it only a passing comment. Investigation of miscellaneous literature shows an entire absence of recorded cases of involvement of the rectus abdominis. As a fair index of the rarity of post-typhoidal myositis, it is of interest to note that Osler,[3] in a relatively recent compilation of a large number of cases of typhoid fever (829 in all), mentions the occurrence of the condition either as a complication or a sequela only once; in this instance the calf muscles were affected. This must be taken to represent a fairly universal medical experience.

[3] Johns Hopkins Hospital Reports: Studies in Typhoid Fever Nos. I, II, III.

Correlatively with this carefully observed series of cases, we have the extensive surgical observations of Keen,[3] who in over 900 carefully annotated cases has not found the condition occurring once. It would be difficult to find two more significant series, representing in combination nearly 1,800 cases of typhoidal infection.

The report of this particular case does not require any incidental consideration of post-typhoidal lesions occurring by predilection in the rectus abdominis, such as, for example, waxy or granular degenerative changes or hematoma, a condition not uncommon and usually preceded by some form of degeneration.

Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-Ninth Annual Meeting, Held at Washington, D. C., May 12, 13 and 14, 1903.

(Concluded from No. 19, p. 521.)

Second Day, Wednesday, May 13.

CENTRAL NEUROFIBROMATOSIS.

This was a contribution to the study of tumors of the medullo-ponto-cerebellar angle, by Drs. J. Fraenkel and J. R. Hunt of New York. Five cases were reported at length, showing a common origin of the tumor from cranial nerve trunks. The writers concluded that the pathological structure of the growths is of a kindred nature — neurofibromatosis pure, or in various stages of metamorphosis and transformation. The locality is almost identical — the angle formed by the junction of pons medulla and cerebellum. Their symptomatology, because of this localization, is in the essential features analogous.

The certainty of localization, the essentially benign nature of the growths, their loose attachment to the meninges and nerve trunks, distinguish this group of intra-cranial tumors as a most favorable one for surgical intervention.

In view of all this, they find justification for the suggestion to assign a separate place to this syndrome in the group of intra-cranial tumors. The susceptibility of the cranial nerves to neurofibromatosis varies considerably. With the exception of the olfactory and optic, because of genetic peculiarities, any of the cranial nerves may be the seat of neurofibromata.

In general, the sensory nerves are more susceptible and the acoustic pre-eminently so. Primary tumors of the cerebellum or brain stem will often at some stage of the disease simulate closely the syndrome in question. Indeed many of the cases of this type are recorded in literature as cerebellar tumors, pontine tumors, etc.

From a differential diagnostic standpoint particular stress was laid on the appearance of cranial nerve symptoms before the development of symptoms of intra-cranial pressure. Tinnitus, progressive deafness, facial tics, neuralgias and other symptoms referable to the fifth nerve were mentioned as instances in point.

Dr. Mills said he had several similar cases. In two or three instances he had seen operations done for tumors in this locality which were unsuccessful. He thought it was possible to have a growth of a different nature from that described, though the symptoms might be very similar. A very important feature was that the early symptoms were neural.

Dr. Sachs agreed with Dr. Mills and referred to a case of sarcoma of the cerebellum in the ponto-cerebellar angle that he reported several years ago. In tumors occurring in this region, most of the symptoms are unquestionably due to pressure upon the cerebellum. He considered the operation for the removal of growths located in this special angle a very serious one. The angle is barely accessible without serious impairment of important functions.

Dr. Langdon spoke of a case bearing on the question of diagnosis between neurofibroma and sarcoma. Deafness was the only prominent symptom for several years. The subsequent history indicated a slowly developing growth occupying the medullo-ponto-cerebellar angle. There was complete deafness with slight facial sensory and motor symptoms. A year before death, fourth, fifth and sixth nerve symptoms were well developed. At the autopsy eight small tumors were found, some in the pia, but most of them in the dura. He thought the long duration of the symptoms (seven years) might furnish a point in the differential diagnosis between a sarcomatous growth and neurofibromatosis.

Dr. Patrick said it was extremely difficult to determine the nature of the growth from the symptoms.

PROGRESSIVELY DEVELOPING HEMIPLEGIA, LATER BECOMING TRIPLEGIA.

This was the report of a case by Drs. Charles K. Mills and William G. Spiller of Philadelphia.

Hemiplegia gradually developed on the right side, the lower extremity being more markedly and probably earlier affected than the upper, the case therefore belonging to the clinical type of unilateral progressive ascending paralysis. After several years the left lower extremity also became paralyzed, but not to the same extent as the right. The reflexes were all markedly exaggerated, the Babinski response being present. Sensory symptoms were absent. Microscopical examinations showed intense and long-standing degeneration of the right crossed and the left direct pyramidal tracts, the degeneration extending into the pons but not into the left cerebral peduncle; also comparatively recent degeneration of the left crossed and the right direct pyramidal tracts traced by the method of Marchi into the lower part of the right internal capsule. No lesions, degenerative or focal, were found elsewhere; the case therefore was one of

[3] Surgical Complications and Sequels of Typhoid Fever.

uncomplicated primary degeneration of the motor tracts, much greater and older in the right crossed and left direct pyramidal tracts. The case was regarded as a corroboration of the clinical type described by Mills in the *Journal of Nervous and Mental Disease*, April, 1900.

CHRONIC PROGRESSIVE HEMIPLEGIA.

DR. HUGH T. PATRICK of Chicago reported the case of a girl eighteen years of age, who had been perfectly well and normal in every way until her fourteenth year, when the right hand and foot began to grow clumsy and weak. This disability had gradually increased until the present. The entire right side is now paretic, with distinct diminution of muscular volume but no localized atrophy. Although the general appearance and action of the involved extremities suggested flaccidity, the deep reflexes were all greatly exaggerated and Babinski's sign well marked. It seemed easy to exclude all well known diseases, but he was inclined to think that the case might belong to a new clinical type recently described by Mills under the name "Ascending Unilateral paralysis." Concerning this type, however, he had occasion to examine repeatedly one of the two cases published by Mills, and was satisfied that the case was an example not of a new disease, but of unilateral paralysis agitans. This patient would be presented to the Association later, and the symptoms of paralysis agitans demonstrated. Two additional cases of one-sided paralysis agitans without tremor were briefly reported.

PROGRESSIVELY DEVELOPING HEMIPLEGIA.

This was the report of a case and exhibition of the brain by Dr. G. M. HAMMOND of New York. The patient gradually developed hemiplegia on the right side beginning in the leg, extending to the arm, and finally affecting the face, taking four months for the total extension of the paralysis. Later, paralysis began in the left leg and finally embraced the left arm, but not the face. The autopsy disclosed extensive degeneration in the white matter of both hemispheres, more extensive on the left side. This could be traced downward in both motor tracts.

The last three papers were discussed together.

DR. H. M. THOMAS of Baltimore referred to a case recently under observation of a boy in whom there was marked mental change. The autopsy showed degeneration of both pyramidal tracts without any observable lesion.

DR. W. HIRSCH of New York spoke of two patients with progressive hemiplegia, in whom distinct mental symptoms of general paresis developed at the end of two years. Secondary degeneration of the pyramidal tracts in paretics is well known.

DR. STARR, in discussing Dr. Mills' paper, cited the case of a woman presenting at first the symptoms of spastic paralysis in the right leg. Gradually the right arm became involved, but the face escaped. The only diagnosis possible was unilateral sclerosis. About a year later the left side was similarly affected, in addition to atrophy in the muscles of the arm and leg. Soon after, bulbar symptoms developed rapidly, and death took place eighteen months after the onset, with all the signs of well-marked amyotrophic lateral sclerosis. It seemed to him, that in Dr. Mills' case, the differential diagnosis of amyotrophic lateral sclerosis should not be overlooked. He thought these cases should be classified into a large general group exclusively limited to the motor tract of the nervous system.

DR. DANA spoke of a case which seemed to belong to the type described by Dr. Mills. The condition appeared somewhat like a unilateral type of multiple sclerosis. A man forty-five years of age gradually developed descending right hemiplegia associated with the usual accompaniments of spasticity. The diagnosis rested between a sclerotic area in one cerebral hemisphere, or some type of paralysis agitans. A man with unilateral paralysis agitans without tremor at present under observation, at first impressed him as being a case of hemiplegia due to some degeneration of the motor tract. Subsequently he developed the characteristic symptoms of paralysis agitans.

DR. COLLINS reported the case of a man who became gradually hemiplegic on the left side. About a year later he began to have emotional symptoms, such as involuntary laughter without adequate cause. Subsequently, a right hemiplegia developed. The emotional symptoms are now conspicuous, and he thought the lesion therefore involved the thalamus.

DR. SACHS had seen a patient with progressive hemiplegia who gradually became completely paralyzed and demented, and finally succumbed to the disease.

DR. PATRICK then showed a patient (the one referred to in his paper) with unilateral paralysis agitans without tremor, in whom the condition had existed for five years. Tremor could be developed in the affected upper extremity when the patient made an effort to forcibly grasp an object with the opposite hand.

DR. MILLS admitted that there were several things in Dr. Patrick's case which pointed toward the diagnosis of unilateral paralysis agitans, but he did not feel thoroughly convinced that this is the correct diagnosis. He said that in his original paper he had stated that among the affections from which it was to be differentiated was unilateral amytrophic sclerosis. The patient was under observation from 1897 to 1903. The only systemic disease found on microscopical examination was the pyramidal degeneration described by Dr. Spiller. He considered the case referred to by Dr. Collins as one of disseminated sclerosis with bulbar symptoms. He thought the discussion had shown the disease to be much more common than was supposed.

DR. HAMMOND said that his case showed a different type of disease from the one described by Dr. Mills and Dr. Spiller. He thought it would take more than a close observer to tell the

difference at the bedside before a post-mortem examination had been made.

FLACCID PARALYSIS FOLLOWING CEREBROSPINAL MENINGITIS.

Dr. Wm. N. Bullard of Boston read a paper with this title and stated that the ordinary forms of paralysis following cerebrospinal meningitis as described in the textbooks are spastic. There is, however, also a flaccid form which usually appears as paraplegia. This closely resembles in its later stages the conditions which are found in the later stages of anterior poliomyelitis. In the earlier stages it is characterized by the persistence of pain and tenderness to a much greater degree than occurs in poliomyelitis, and also by a tendency to accompanying spastic contracture. He thought it very probable that some of the epidemics which have been described as anterior poliomyelitis were really due to cerebrospinal meningitis, the existence of which in the epidemic form is not uncommon, while the evidence for the existence of true epidemics of anterior poliomyelitis, usually a sporadic affection, is not yet absolute. Several cases of this form of paralysis were reported.

Dr. J. J. Thomas of Boston had seen many of these cases. He thought they were cases of cerebrospinal meningitis. During the acute stage of poliomyelitis it was often difficult to make a diagnosis. He had also noted the presence of tenderness, the early formation of contractures, and the tendency of the paralysis to be bilateral.

Dr. Henry Upson of Cleveland referred to a case of spinal meningitis with multiple neuritis which he reported several years ago. There was diffuse tenderness over the legs. The autopsy revealed both conditions in a marked degree.

Dr. Knapp thought the previous history would enable us to make a distinction between cerebrospinal meningitis and anterior poliomyelitis. In cerebrospinal meningitis the symptoms might be so slight and so little characteristic as to be easily mistaken for the initial fever and malaise of anterior poliomyelitis.

Dr. J. J. Putnam doubted whether it was always possible to make a differential diagnosis or to decide that cerebrospinal meningitis is present. He thought it important to limit the differentiation and to recognize the two types, but it should be noted that the two stood in a certain sort of relationship to each other. He believed what was ordinarily called anterior poliomyelitis occurs in epidemics. He referred to twenty-eight cases occurring in the vicinity of Boston and seen by him.

Dr. E. D. Fisher of New York said there was no difficulty in making a differential diagnosis between cerebrospinal meningitis and poliomyelitis, except during an epidemic when both conditions were found.

Dr. Patrick thought the examination of the cerebrospinal fluid was of value in making the diagnosis.

A CASE OF ALEXIA.

Dr. Philip Zenner of Cincinnati reported the case of a man sixty-three years of age. Forty years ago he had a venereal sore, but without any constitutional manifestations. Eighteen years ago he had acute articular rheumatism. For several years he has had some dyspnea on exertion. The alexia came on in April, 1902, during an attack of dyspnea. It is not improbable that the attack came on during sleep. The only other speech disturbance which he has observed is occasional difficulty of finding a word, or using a wrong word. In addition to the aphasic manifestations and occasional dyspnea, he complained of irregular heart action, precordial pain, and disturbed sleep. The heart was enlarged and the sounds muffled. The urine contained some albumen but was otherwise normal. There was no motor paralysis nor ataxia. The cutaneous sensations, hearing, taste, and smell, pupils, optic disks, and knee jerks were normal. The ankle jerks were absent. There is a right hemianopsia. Central vision is normal. He often repeats himself in conversation, forgets occurrences of the day, and vacillates in his actions, but in general, he manages his business and his own affairs. He fully understands everything said to him, and expresses himself clearly and fluently. He is altogether unable to read, but he can tell single letters, though not always with ease, and often incorrectly. He recognizes capital letters much better than small letters. He can read only so far as he is able to spell the words. Whenever he succeeds in spelling the word correctly he recognizes it at once. During the time he was under observation there was no change in his condition. As to the seat of the lesion, the hemianopsia pointed clearly to the occipital lobe. The relation of the angular gyrus, now generally accepted as the visual speech center, to the lesion can be less definitely outlined. Its destruction would, doubtless, cause more extensive aphasic manifestations than existed in this case. The lesion probably encroaches upon this area and severs its relations with the lower visual centers.

Dr. Smith Baker of Utica said there was a very easy fatigue of accommodation in such cases, and that might possibly give a clue to the difficulty experienced by the patient in recognizing certain figures which differ in form from certain other figures.

Dr. Langdon believed that the lesion was distinctly limited to a visual type of aphasia. He referred to a case of pure alexia he had seen, in which the man was unable to read after a few moments what he had written.

Dr. Knapp mentioned the case of an active, intelligent woman of middle age, who awoke one morning with considerable dizziness. A valvular lesion of the heart was present. There was well-marked alexia with right hemiplegia, and slowness in recognizing objects by sight, although the visual fields were normal. She was able to

write. She recognized her room and household perfectly well, and also the neighborhood in which she had lived for many years, but everything seemed reversed. The house seemed to be on the opposite side of the street, and the relations of the house seemed exactly reversed.

THE PRINCIPLES UNDERLYING PRACTICE IN MENTAL THERAPEUTICS AND LEGAL REGULATION OF ITS PRACTICE.

This was the title of a paper by DR. RICHARD DEWEY of Wauwatosa. He concluded that the practice of mental therapeutics is an important part of the practice of medicine as a whole, and should be taught systematically and so regulated as to prevent fraudulent practices or imposition.

DR. BAKER believed that the time is coming when we shall be forced to give more attention to the mental side of the human constitution in our attempt to restore people to health. He thought such method should play an important part in all the sources of what we now call purely nervous affections, because upon last analysis they prove to be neuro-psychical.

DR. ZENNER said there was nothing of more value than psychic treatment, and that such treatment often produces transitory relief of organic disease. In a great many therapeutic measures the relief comes through the mind.

DR. LANGDON did not think it possible to approach a solution of the problem until we have a better curriculum in the medical schools.

(To be continued.)

Recent Literature.

Protozoa and Disease. By J. JACKSON CLARKE, M.B. (Lond.), Author of "Surgical Pathology and Principles," etc. New York: Wm. Wood & Co. 1903.

In this book it is the author's intent to set forth the important facts which have been definitely established concerning the protozoa as parasites, and in this way to introduce to the medical profession the rôle played by the protozoa in disease. The author proposes in the second part to collect the work that has been done, with reference to protozoa, on those diseases which until recently were considered of doubtful or unknown etiology.

The opening chapter, which consists of general considerations concerning "the unicellular organisms and the cell," is marred by the presentation of the endogenous formation of leucocytes from the giant cells of the bone marrow as an established fact from which to draw an analogy. This interpretation given by Denys to the presence of leucocytes in the giant cells of the marrow has not been generally accepted. The greater number of observers working on the bone marrow have regarded the giant cells in question as phagocytic, and this view is supported by the degeneration of the ingested leucocytes. The use for purposes of analogy of such a questionable process as the endogenous origin of the leucocytes is, of course, unfortunate.

No attempt is made to classify the protozoa, but the various groups and the more important species are set forth in a manner both pleasing and instructive. Although sufficiently elementary to serve the purpose of the beginner, the book contains a store of information which should excite the interest of every student of medicine. Of especial interest is the account of Plasmodiophora brassicæ, an organism causing the tumor masses found on the roots of cabbages, a disease commonly known as "stump root." An account is also given of Ameba coli and its relation to dysentery and liver abscess. Human malaria is discussed in a special chapter introducing the class of parasitic organisms known as Sporozoa. The life cycle of the malaria organism is illustrated by a diagram, so that its various stages are readily followed.

Among the Sporozoa, the Hemosporidia and the Neosporidia concern medicine more especially. The essential facts concerning the life history of Pyrosoma bigeminum, the organisms of Texas fever, are discussed. The subclass "Neosporidia" includes the Myxosporidia (the psorosperme of fishes); the Microsporidia — exemplified by the organism of pébrine, a disease of silkworms; and the Sarcosporidia, organisms found in the muscles of various animals.

Of the Flagellates, the Trypanosoma which infest the blood in the tsé-tsé fly disease of Africa, in the disease known as surra in South Asia and in mal de caderas of South America, — all diseases affecting domestic animals, — are of especial interest. Trypanosoma have also been found in the human blood in certain obscure tropical fevers.

A short chapter is given over to the diseases which affect the protozoa themselves. Although certain portions of the book are somewhat speculative, it, as a whole, is of value in that it presents the protozoa together with the pathological processes which they bring about. Not only are organisms described, but a chapter is given up to technique and specific directions given for the study of the various types.

How to Succeed in the Practice of Medicine. By JOSEPH MCDOWELL MATHEWS, M.D., LL.D. Louisville: John P. Morton & Co.

A book on such a subject as this is always interesting reading, but we are inclined to think may hardly serve as a guide to the physician beginning practice. The author, as a teacher in medicine, tells us in the preface that he has often talked to students about the "business side" of the medical profession. The book is a reduction of these thoughts to words. As a narrative of the methods which have led to the anthor's success we may commend the volume. Its suggestions are many and for the most part useful, but we suspect that success in practice cannot be furthered by the experience of another. It is after all peculiarly a personal matter.

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PUBLIC HEALTH PROBLEMS.

IN two recent sanitary papers [1] the author of one of the most practical and useful publications yet issued in this country ("Municipal Sanitation") shows his ability to deal with the philosophical as well as the utilitarian side of the subject.

In "Dirt, Disease and the Health Officer" Dr. Chapin assumes the position, which is undoubtedly correct, that many health officials have blindly expended their strength in attacking mere filth without understanding the true specific causes and conditions under which such filth may prove an injury to the public health. The popular mind is very apt to take very much for granted in the matter of disease prevention, and to believe that such diseases generally have a spontaneous origin in filth. Such was the origin of many of the strict plumbing laws now in existence. A plumber appeared before a legislative committee bringing with him an array of defective pipes and traps, and the astonished committee, without further consideration, recommended a stringent law. The question whether such defects had been a fruitful source of disease, and whether actual proofs of cases of illness from such causes could be cited, was not even asked by the committee.

So, too, with the modern practice of embalming. It is the living, breathing, human being sick with infectious diseases who is a public danger, not the dead corpse sealed in its coffin, and the duty of the health officer is much more concerned with the former than the latter. It is a question whether the law in the one instance and the custom in the other have not largely sprung from the financial interests of certain classes than from the demands of public health.

Dr. Chapin in this brief paper strives to bring out the true principles on which practical sanitary work should be founded. The following quotations show the author's trend of thought:

> When our honored and lamented Reid went to Havana and discovered that yellow fever was transmitted by the bite of a mosquito, and Gorgas, by the most brilliant sanitary experiment ever made, put an end to this disease in its very stronghold, they drove the last nail in the coffin of the filth theory of disease. . . . The majority of even intelligent people to-day believe that Havana was made healthy by municipal engineering, while it was really accompanied by scientific effort specifically directed against certain infections.
>
> An entirely disproportionate amount of time and money is devoted to plumbing regulation and the abatement of minor nuisances which have no relation to public health. Popular misconception as to the relation of dirt and disease is illustrated by the advertising cartoons of "Spotless Town," which is supposed to be so clean that the poor old doctor is dying of starvation. But we can rest assured that however spick and span may be the streets, and however the policeman's badge may be polished, so long as there is found the bore so careless with his expectoration, and the doctor who cannot tell a case of sapolio from one of diphtheria, the latter disease, as well as tuberculosis, will continue to claim their victims.

Again he says:

> I would plead with health officers for a more rational perspective in directing their efforts and to devote more attention to the isolation of infectious diseases, medical inspection, disinfection, vaccination and the control of milk supplies and less to the abatement of nuisances; and in the latter, more attention to those nuisances which clearly and directly menace health, and less attention, or none at all, to those which do not.

These may be deemed radical statements, but they are the opinions of a practical health officer after years of experience and careful observation.

In "Preventive Medicine and Natural Selection" the author takes up the question whether active health measures do not interfere with natural selection so far as human beings are concerned. Darwin says: "There is reason to believe that vaccination has preserved thousands who from a weak constitution would formerly have succumbed to smallpox. . . . It is surprising how soon a want of care, or care wrongly directed, leads to the degeneration of a domestic race." [2] The assumption here is wrong at the outset, since observation shows that smallpox attacks and kills both the weak and the robust

[1] "Dirt, Disease and the Health Officer." "Preventive Medicine and Natural Selection," by Charles V. Chapin, M.D., Superintendent of Health. Providence, R. I. 1900.

[2] The Descent of Man. Part I, Chap. 5.

without discrimination. Dr. Chapin says upon this question:

> The practical point which I am here venturing to consider is whether we are warranted in abandoning our fight against these diseases, and permitting natural selection to have again a free field.

Several reasons are then given for continuing the vigorous campaign against infectious diseases:

> The infectious diseases have been held by some to be an important factor in eliminating the feeble, the poorly nourished and the constitutionally defective. While it is true that such may more readily succumb when attacked by disease, there is no evidence that they are any more susceptible to most of the communicable diseases than are the most robust. The selective action of these diseases cannot therefore be so important a factor in maintaining race stamina as is sometimes assumed.
>
> In conclusion, it appears that natural selection in the relation of man to infection is working for the ultimate good of the race; and while public health measures are in some respects antagonistic to this process, in others they favor it. Furthermore, the immediate results of preventive measures are so marked, and the chances of overcoming these diseases in the future by other means than the immunity due to selection, is so great, that we find no warrant in the principles of organic evolution for abandoning our present warfare.

THE TITLE OF SURGEON.

THE high place which surgery as a branch of medicine has taken in the popular mind is sufficiently evident. The reasons for this are not far to seek. In many respects it is the most exact branch of medicine. It permits the demonstration of immediate results. It has less to do with our somewhat discredited drugs than other lines of practice. All these things, together with the appeal to the popular imagination, not leaving out of account the extraordinary advances made in surgical theory and practice during the last few years, place surgery and the surgeon in a somewhat distinct category. The sharp distinction between medicine and surgery, which has been growing rather than decreasing as specialism has progressed, is likely in the near future to give place to a closer relationship between the two fundamental branches of medicine. This is sufficiently shown by the work of our best and most progressive surgeons, who are more and more investigating problems which have a medical as well as a surgical bearing, and possibly are less intent upon the operative side of their calling. Such a recognition of the interrelations of medicine and surgery is altogether to be encouraged, and no doubt will bear fruit in the immediate future.

In the meantime it is interesting and entertaining to observe the extraordinary hold which the mere name surgeon has upon the professional mind. To be a surgeon is apparently still the chief ambition of the ordinary medical student. If the attainment of his ambition is impossible, he enters upon the more humdrum life of the medical practitioner with lingering regret. That the name surgeon carries with it much authority is shown by the curious fact that this title is apparently retained wherever possible in work which is not distinctively surgical. Men concerned with diseases of the eye, for instance, apparently wish to be known as ophthalmic surgeons rather than as opthalmologists, and are often so designated in their hospital positions. The ophthalmologist clearly deals with many cases which have no relation whatsoever to surgery; in fact, his surgical practice must be but a small part of his general work. Nevertheless, he wishes to be known as a surgeon. Writers of textbooks on ophthalmology are extremely apt, in describing the most ordinary tests, to speak of the person performing these tests as a surgeon. Turning to the army, we see the same tendency prevailing. Although, and this is coming to be more and more the case, a very great proportion of the work of the army medical officer is medical rather than surgical, he still is known as surgeon.

In general, we find this tendency running through the whole profession. If there is the slightest excuse for dubbing a man surgeon, this title is chosen in preference to the time-honored one of physician. We have no fault to find with this attitude of mind. It merely seems to us desirable that in the arrangement of medical titles the word surgeon should be more strictly applied, and the word physician looked upon as a term of equal dignity and desirability. No doubt time will adjust this somewhat anomalous condition, and the physician, when he has attained in the popular mind to the degree of accomplishment which is already the surgeon's, will invest his title with an equal popularity.

A TIMELY REBUKE.

IT is reported from London that the Hon. Stephen Coleridge, well known for his activity in the antivivisection movement, has recently lost a suit in which he was defendant before Baron Alverstone, Lord Chief Justice of England. The circumstances were that Mr. Coleridge in a public address read a statement fur-

nished him by two women, in which Dr. Bayliss, professor of physiology at London University College, was charged with deliberate cruelty in the conduct of a certain physiological experiment. As is generally known, vivisection is permitted by the English law under certain restrictions and limitations, and Dr. Bayliss was one of those licensed to perform experiments. He naturally resented the imputations made by Mr. Coleridge, and began proceedings for libel and slander, with the result that the defendant was adjudged guilty and a verdict, with damages amounting to £2,000, rendered in Dr. Bayliss' favor.

Such a decision coming from such a source cannot fail to have a most salutary influence. The vilification of scientific men by the adherents of the cause of antivivisection has apparently been growing year by year, with but small regard to the facts. English experimenters have been exposed to much defamation, possibly more than men working in similar lines in this country, but so far as we know legal action has not hitherto been taken. It is fortunate for the cause of fairness and decency that so prominent a man socially, and so conspicuous an advocate of the cause of antivivisection, should be brought to account for his malicious utterances. How deep an impression this legal rebuff may have upon the rank and file of the antivivisection agitators it is, of course, impossible to say, but we suspect that in England at least there will hereafter be a certain hesitation in the promulgation of unverified statements which reflect upon the character of highly respected men. It will be difficult also, in this instance, for the defendant to pose as a martyr to the cause, or to elicit popular sympathy on any pretext whatever. Many of the attacks made upon the medical profession in relation to vivisection are too manifestly absurd and wide of the truth to excite any deep resentment, but it is well to have it understood that even such statements may not be made with impunity, and without incurring legal reproof. Freedom of speech has long since reached its limit in this matter.

MEDICAL NOTES.

Pneumonia in Chicago. — According to the Bulletin of the Chicago Health Department, it is announced that for the first fortnight of the month of November 135 deaths from pneumonia have been reported and 82 from consumption, showing an excess of the former disease. Such a prevalence of this common and frequently fatal affection is worthy of careful study As a possible prophylactic measure the Bulletin urges a return to a simpler life.

Gift to Stamford, Conn., Hospital. — It has been announced that the gift of $10,000, made anonymously a year ago to the Stamford, Conn., Hospital, was from Robert M. Bruce, a resident of Greenwich. Some time ago Mr. Bruce also gave to the town of Greenwich an isolation hospital.

A Ruling in Favor of Christian Science. — According to a report from Columbus, Ohio, it is stated that the supreme court has rendered a decision which apparently permits the practice of Christian Science in Ohio. The decision turns upon a case tried some time ago in which a family was acquitted of the charge of manslaughter in the lower court in having refused medical aid to a child. The state carried the case to the supreme court on exceptions, which were overruled. Such decisions we must regard as unfortunate and detrimental to the well-being of the community.

Lecture under Auspices of the Henry Phipps Institute. — Dr. William Osler, on the evening of Dec. 3, will deliver a lecture on "The Home in Relation to the Tuberculosis Problem," in Philadelphia, under the auspices of the Henry Phipps Institute for the study, treatment and prevention of tuberculosis. This is one of a series of lectures to be given on tuberculosis in the course of the winter by men eminent in this branch of medicine.

The Senn Prize Essay for 1904. — The Committee on the Senn Medal begs leave to call attention to the following conditions governing the competition for this medal for 1904:

A gold medal of suitable design is to be conferred on the member of the American Medical Association who shall present the best essay on some surgical subject. The award will be made under the following conditions: (*a*) The name of the author of each competing essay must be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. (*b*) All successful essays become the property of the Association. (*c*) The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the Association. (*d*) The competition is to be confined to those who, at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association. (*e*) The competition for the medal will be closed on and no essays received after March 1, 1904. Communications may be addressed to any member of the committee, which con-

sists of the following: Dr. James H. Dunn, Chairman, Minneapolis; Dr. M. L. Harris, 100 State Street, Chicago; Dr. Floyd McRae, Atlanta, Ga.

IMPROVEMENT OF VITAL STATISTICS. — At the recent meeting of the American Public Health Association held at Washington the committee on vital statistics reported that effective co-operation had been instituted between that Association, the Conference of State Boards of Health, the American Medical Association, the United States Census Bureau and the United States Public Health and Marine Hospital Service for the improvement of the vital statistics of this country. Among the objects sought are the extension of adequate methods of registration, the use of uniform and comparable tables and rates in bulletins and reports, and the improvement of the international classification of causes of death. A pamphlet on "Statistical Treat- of Causes of Death" has been issued by the United States Census Bureau, requests for which should be addressed to Mr. W. A. King, Chief Statistician for Vital Statistics, Census Bureau.

It has special reference to the difficulties encountered in compiling deaths returned from several causes, and asks for the co-operation of the profession in framing a thoroughly satisfactory method of procedure in such cases.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Nov. 24, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 52, scarlatina 35, typhoid fever 22, measles 98, smallpox 0.

CASES OF ANTHRAX. — Owing to the occurrence of cases of anthrax in Lynn, Mass., and Boston, suspicion has been directed to several bundles of skins, recently imported. Both the Lynn and Boston boards of health are investigating the matter.

WOMEN NURSES IN INSANE HOSPITALS. — At the tenth semi-annual conference of the State Board of Insanity, recently held in this city, a subject under discussion was the question of women nurses in wards for insane men. The discussion was an active one, with a general consensus of opinion that women might advantageously be employed in such work more than has hitherto been done. Particularly in the sick wards and in the care of old men women have been found desirable.

A CENTENARIAN. — Patrick Scanlon of Wendell, Mass., died Nov. 21, at the reputed age of one hundred and three years. He was born in Ireland, March 15, 1800.

DEDICATION OF MT. SINAI HOSPITAL. — Exercises in dedication of the new Mt. Sinai Hospital were held Nov. 22, at the new building, 17 Staniford Street, Boston. An out-patient department, as well as wards for house patients, will be maintained. The services of the hospital will not be limited to members of the Jewish race.

WARREN TRIENNIAL PRIZE. — The Warren Triennial Prize was founded by the late Dr. J. Mason Warren in memory of his father, and his will provides that the accumulated interest of the fund shall be awarded every three years to the best dissertation, considered worthy of a premium, on some subject in Physiology, Surgery, or Pathological Anatomy, the arbitrators being the physicians and surgeons of the Massachusetts General Hospital.

The subject for competition for the year 1904 is on some special subject in physiology, surgery, or pathology.

Dissertations must be legibly written, and must be suitably bound, so as to be easily handled. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation.

Any clew given by the dissertation, or any action on the part of the writer which reveals his name before the award of the prize, will disqualify him from receiving the same.

The amount of the prize for the year 1904 will be $500.

In case no dissertation is considered sufficiently meritorious, no award will be made. Dissertations will be received until April 14th, 1904.

A high value will be placed on original work.

NEW YORK.

DONATIONS TO MONTEFIORE HOME. — At the annual meeting and election of officers of the Montefiore Home and Hospital for Chronic Invalids, which was held on Nov. 1, it was announced that two gifts, aggregating $75,000, had been made to the institution. One was an endowment fund of $50,000, presented by S. R. Guggenheim, and the other a fund of $25,000, to be known as "The Betty Loeb Memorial Fund," instituted and endowed by James Loeb in memory of his mother. A report was also

presented giving the details of the construction of an annex to the hospital which is now in course of erection. This is a four-story building of brick and stone which will cost about $30,000 and is to be used for emergency and isolation purposes.

HEBREW SHELTERING GUARDIAN SOCIETY. — At the annual meeting of the Hebrew Sheltering Guardian Society, held at the home of the society on the Hudson at One Hundred and Fiftieth Street on Nov. 15, it was announced that gifts amounting to $117,500 had been received. It is proposed, as soon as sufficient funds have been raised, to purchase a large plot of ground in Bronx Borough and erect on it some fifty or sixty cottages, each to accommodate twenty children. The general plan of the institution, as reorganized, will be that of Dr. Barnado's in London, and the children will receive manual and technical training. Among the improvements which have been made in connection with the present home are the establishment in the neighborhood of a reception house, where new inmates are kept under supervision for a time to prevent the introduction of contagious diseases among the other children, and of a building especially for the care of the infants.

A CENTENARIAN. — Mrs. Marie Pigrum Harrison, a native of England, died in Brooklyn on Nov. 14 at the age of one hundred years. Her husband, who was an actor, and died about twenty years ago, was for a considerable time a member of P. T. Barnum's company at the old Ann Street Museum, New York, and Mrs. Harrison had a unique collection of shoes and articles of clothing once worn by Tom Thumb, Commodore Nutt and other famous dwarfs, with whom she was a great favorite.

Miscellany.

IN MEMORIAM — GEORGE HAVEN, M.D.

AT a meeting of the Obstetrical Society of Boston, held Nov. 17, 1903, the following resolutions were unanimously adopted:

Resolved, That we, the Obstetrical Society of Boston, do hereby express our sense of the great loss that the profession as well as our society has sustained by the death of our esteemed colleague and fellow member, Dr. George Haven.

" By the brilliancy of his professional career, his devotion to his patients, his unfailing tact and courtesy, he made a name and place for himself that sufficiently attests his value to his professional friends and to the community.

" *Resolved*, That the secretary be directed to forward a copy of these resolutions to his family and to the BOSTON MEDICAL AND SURGICAL JOURNAL."

MALCOLM STORER, M.D., Secretary.

Correspondence.

THE AMERICAN SOCIETY OF CLINICAL SURGERY.

BOSTON, Nov. 17, 1903.

MR. EDITOR: My New England conscience prompts me that I promised to write out for the JOURNAL some sort of report of the meetings of the American Society of Clinical Surgery, held Friday and Saturday, Nov. 13 and 14, in Baltimore and Philadelphia.

The experiment, so far, has proved a success beyond our expectations. Twenty-one men, out of the total membership of thirty-six, gathered at the Johns Hopkins Hospital on Friday. They represented the schools and hospitals of Baltimore, Philadelphia, New York, Boston and Cleveland. The Johns Hopkins Hospital entertained us delightfully with clinics and luncheon. After the organization of the society had been perfected, we spent an hour in Dr. Halsted's surgical clinic where he demonstrated important cases and his method of teaching. At 11 o'clock Dr. Finney showed some interesting results of plastic operations upon the nose and demonstrated his now well-known operation of pyloroplasty. At half-past twelve Dr. Harvey Cushing demonstrated his method of teaching operative surgery to small classes of students, working upon dogs as actual subjects. The procedures were extremely interesting. After a delightful luncheon, given us by the hospital, we listened to Dr. Bloodgood's capital demonstration of his method of teaching surgical pathology, saw Dr. Cushing's exhibition of patients upon whom he had operated for the removal of the Gasserian ganglion and for drainage of hydrocephalus, and to Dr. Young's explanation of his methods in prostatectomy and sundry other genito-urinary surgical conditions.

On Friday evening, at half-past six, the society left on a special car for Philadelphia, where it spent the night. Saturday was passed in Philadelphia. Perhaps the most interesting number for that day was Dr. G. G. Davis' exhibition of methods in the teaching of applied anatomy. Dr. Davis is an accomplished surgeon as well as a thorough anatomist and his collection of anatomical preparations, illustrating surgical lesions, is unique; this exhibition was given in the old Medical Hall of the University of Pennsylvania, at 10 o'clock in the morning. At 11 o'clock we adjourned to the University Hospital, where Dr. Edward Martin gave a series of brief demonstrations illustrating the effect of head positions upon the epiglottis during anesthetization, a mechanical intestinal suture and the value of percussion and auscultation in the diagnosis of fractures. Dr. Charles H. Frazier followed with a demonstration of the practice and results of operations upon the Gasserian ganglion and some further interesting observations upon the technique of intracranial operations. After luncheon at the Rittenhouse Club the society proceeded to the always delightful old Pennsylvania Hospital, where Dr. R. G. LeConte and Dr. John H. Gibbon did the honors. Short demonstrations of results in the treatment of acute osteomyelitis and of perforating gastric ulcer were followed by a pilgrimage to the ancient galleries, wards and library of the hospital. This ended the first series of meetings of the society, an experience which we all look back upon as most valuable and delightful.

You see how impossible it would be formally to report such a program. The society is small, for a large gathering would defeat our purposes. Even the name is still *sub judice* — several members feeling that some such title as Society of Surgical Research would be more appropriate; but that the organization is well set upon its legs and likely to continue is probably established.

Sincerely yours,

J. G. MUMFORD, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 14, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,248	328	23.32	19.79	3.44	4.40	.72
Chicago . . .	1,885,000	484	116	24.79	14.05	5.37	4.95	2.88
Philadelphia	1,378,527	376	99	23.13	10.64	7.98	—	1.86
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	190	41	23.68	14.21	2.63	2.63	2.63
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	357,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	120	—	22.50	23.33	7.50	.83	4.16
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	59	15	25.50	17.00	3.40	6.80	1.70
Boston . . .	603,163	192	43	40.63	32.30	4.17	4.17	4.17
Worcester . .	132,044	33	11	3.03	24.24	—	—	—
Fall River . .	115,549	31	10	35.48	16.13	—	16.13	3.23
Lowell . . .	101,959	29	10	10.34	20.69	3.45	—	—
Cambridge .	98,639	21	9	23.81	14.28	9.52	4.76	—
Lynn	72,497	17	5	5.88	11.76	—	—	—
Lawrence . .	69,766	23	8	21.74	4.35	8.70	—	—
Springfield .	69,389	26	1	23.10	11.55	7.70	—	7.70
Somerville .	68,110	—	—	—	—	—	—	—
New Bedford	67,198	32	14	25.00	12.50	—	6.25	3.12
Holyoke . . .	49,286	—	—	—	—	—	—	—
Brockton . .	44,873	12	3	25.00	—	8.33	—	—
Haverhill . .	42,104	10	4	10.00	20.00	—	—	—
Newton . . .	37,794	14	5	14.28	7.14	—	—	—
Salem	36,876	11	1	27.27	—	—	—	—
Malden . . .	36,286	11	1	—	18.18	—	—	—
Chelsea . . .	35,876	7	0	—	14.30	—	—	—
Fitchburg . .	35,069	3	—	—	33.33	—	—	—
Taunton . . .	33,656	9	2	11.11	22.22	11.11	—	—
Everett . . .	28,620	6	4	16.67	—	—	—	—
North Adams	27,862	6	—	16.67	—	—	16.67	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	7	2	14.30	—	—	14.30	—
Waltham . .	25,198	7	—	—	14.30	—	—	—
Brookline . .	22,608	4	1	—	—	—	—	—
Pittsfield . .	22,589	8	1	25.00	25.00	—	—	12.50
Chicopee . .	21,031	6	2	66.67	16.67	—	—	—
Medford . . .	20,962	4	—	—	25.00	—	—	—
Northampton	19,883	4	1	—	25.00	—	—	—
Beverly . . .	15,302	4	1	—	50.00	—	—	—
Clinton . . .	15,161	4	—	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	7	0	28.60	—	—	—	—
Woburn . . .	14,300	3	—	33.33	—	—	—	—
Hyde Park .	14,175	5	1	20.00	—	—	20.00	—
Adams . . .	13,745	—	—	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	5	0	20.00	40.00	—	—	—
Melrose . . .	13,600	2	—	—	—	—	—	—
Westfield . .	13,418	1	—	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	1	1	—	—	—	—	—
Framingham	12,334	2	—	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	3	2	66.67	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	3	1	33.33	—	—	—	—
Plymouth . .	10,780	—	—	—	—	—	—	—

Deaths reported, 3,050; under five years of age, 743; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 693, acute lung diseases 512, consumption 334, scarlet fever 12, whooping cough 15, cerebrospinal meningitis 8, smallpox 6, erysipelas 8, puerperal fever 12, measles 14, typhoid fever 56, diarrheal diseases 104, diphtheria and croup 123.

From whooping cough, New York 5, Chicago 4, Philadelphia 2, Baltimore 1, Providence 1, Salem 1, Chicopee 1. From erysipelas, New York 1, Chicago 2, Philadelphia 1, Providence 1, Boston 2, Salem, 1. From smallpox, Philadelphia 1, Pittsburg 5. From measles, New York 9, Chicago 1, Providence 1, Boston 3. From scarlet fever, New York 5, Chicago 2, Philadelphia 2, Baltimore 1, Lowell 1, Cambridge 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Oct. 31, the death-rate was 16.3. Deaths reported, 4,718; acute diseases of the respiratory organs (London) 260, whooping cough 41, diphtheria 61, measles 74, smallpox 4, scarlet fever 40.

The death-rate ranged from 4.7 in Hornsey to 29.9 in Warrington, London 15.8, West Ham 18.9, Brighton 10.8, Southampton 9.9, Plymouth 16.3, Bristol 13.5, Birmingham 18.3, Leicester 15.2, Nottingham 17.2, Liverpool 19.3, Bolton 11.4, Manchester 17.4, Salford 20.0, Bradford 14.7, Leeds 18.7, Hull 16.3, Cardiff 15.7, Rhondda 13.9, Merthyr Tydfil 18.2, Middlesbrough 19.8, Tynemouth, 19.9

METEOROLOGICAL RECORD.

For the week ending Nov. 14, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S.. 8	30.17	43	52	34	38	57	48	W	W	20	8	O.	C.	0
M. 9	30.18	52	64	40	60	42	51	W	S W	S	9	C.	C.	0
T..10	29.96	62	69	44	69	59	64	S W	S W	12	7	O.	C.	0
W..11	29.96	48	52	43	77	88	80	N E	N E	8	9	C.	C.	0
T..12	29.91	51	59	43	85	40	62	W	W	12	10	O.	C.	T
F..13	30.00	52	61	42	61	41	51	S	W	12	9	F.	C.	0
S..14	30.05	44	49	40	44	48	46	N	W	6	10	O.	C.	0
☞	30.03		57	41			57							T

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING NOV. 19, 1903.

WILLIAMS, L. L., assistant surgeon-general. To proceed to New York, N. Y., for special temporary duty; and as inspector of the Purveying Depot. Nov. 14, 1903.

CARMICHAEL, D. A., surgeon. Bureau letter of Oct. 5, granting Surgeon Carmichael leave of absence for thirty days from Oct. 16, amended so as to read twenty-four days from Oct. 16. Nov. 14, 1903.

WASDIN, EUGENE, surgeon. Granted leave of absence for one month from Dec. 7. Nov. 13, 1903.

MAGRUDER, G. M., surgeon. Granted leave of absence for two days from Nov. 17. Nov. 14, 1903.

ROSENAU, M. J., passed assistant surgeon. Relieved from duty at Vera Cruz, Mexico, and directed to rejoin his station in Washington, D. C. Nov. 16, 1903.

PARKER, H. B., passed assistant surgeon. Relieved from duty at Vera Cruz, Mexico, and directed to return to the Bureau at Washington, D. C. Nov. 16, 1903.

LUMSDEN, L. L., passed assistant surgeon. Granted leave of absence for ten days from Nov. 15. Nov. 14, 1903.

RAMUS, CARL, assistant surgeon. Granted leave of absence, on account of sickness, for nine days from Oct. 28. Nov. 14, 1903.

STANSFIELD, H. A., assistant surgeon. To report to Director of the Hygienic Laboratory for duty. Nov. 16, 1903.

GOLDBERGER, JOSEPH, assistant surgeon. To proceed to Laredo, Texas, for special temporary duty. Nov. 17, 1903.

BERRY, T. D., assistant surgeon. To proceed to Cleveland, Ohio, and assume temporary command of the service at that port during absence of medical officer in command; upon completion of which to rejoin his station. Nov. 13, 1903.

BOGGESS, J. S., assistant surgeon. Granted leave of absence for one month from Dec. 15. Nov. 16, 1903.

APPOINTMENT.

Francis Asbury Ashford, of the District of Columbia, commissioned (recess) as assistant surgeon in the Public Health and Marine Hospital Service. Oct. 29, 1903.

RECENT DEATHS.

ALLEN HAZEN, M.D., of New York, died in Jericho Centre, Vermont, on Nov. 17, after an operation for appendicitis. He was thirty-six years of age and was graduated from the College of Physicians and Surgeons, New York, in 1895. He served as an interne in the City Hospital on Blackwell's Island, and for the past five years had been on the board of medical examiners of the Mutual Life Insurance Company.

SAMUEL TALMAGE, M.D., of Brooklyn, N. Y., died on Nov. 20, aged seventy-two years. He was graduated from the Medical Department of the University of the City of New York in 1870.

HERBERT A. STARKEY, M.D., of Sloatsburgh, N. Y., died suddenly on Nov. 21. He was the son of Dr. David Starkey of Philadelphia, and was formerly surgeon for the Pullman Car Company at Pullman, Ill.

Original Articles.

HYPERNEPHROMA.*

BY PAUL THORNDIKE, M.D., AND JOHN H. CUNNINGHAM, JR., M.D., BOSTON.

AT the present time pathologists are forced to classify a certain class of renal tumors from a genetic as well as from a simply morphological point of view. The first steps in this direction resulted from the work of Grawitz (1883), who described a group of tumors (which had up to that time been classed most usually as renal lipomata) as *strumæ lipomatodes aberatæ renis*, and claimed for them a suprarenal origin. In the years immediately following, and in fact up to the present time, other writers have claimed a renal origin for these tumors, some asserting that they arise from the epithelium of renal tubules, while others claim the endothelium of the perivascular lymph spaces as their starting point. It has, however, seemed clear to all that these growths cannot be collected into any one morphological group, and are by no means to be classified simply as sarcomata, carcinomata or adenomata. They have, during the last few years, received the name of hypernephroma, the term signifying any tumor having its origin from adrenal cells, whether the growth be adenoma, carcinoma or sarcoma in type. This term seems a peculiarly fortunate one at this stage of our knowledge, as it definitely indicates the adrenal and not the renal origin of the growths in question, and yet makes no claim for any purely histological basis of classification, and commits us to no one of the many points of view still held by histologists regarding such growths. At the present time the proofs of the existence of this class of growths and of the propriety of using this name for them are about as follows:

(1) The situation of the growth just beneath the kidney capsule — the most common seat of aberrant suprarenal tissue.

(2) The similarity of malignant tumors of the adrenal gland and these malignant growths of aberrant suprarenal origin.

(3) The absence of any transition structure between the growth and the renal tissues surrounding it.

(4) The tendency of the tumor to extend along and to involve venous rather than lymphatic channels.

(5) The resemblance of the tumor cells to those of the suprarenal cortex.

(6) The presence of fat drops and glycogen in the protoplasm of the cells — substances which are by no means universally or even commonly found in the adrenal tissues, and yet which are always present in tumors of this gland so far as they are known.

(7) The property of the nucleolus of staining differently from the nucleus, a fact rarely if ever observed in cells of renal adenomata.

(8) The presence of giant cells like those in the small hyperplastic growths of the suprarenal gland of which we have a knowledge.

(9) The existence of an abundant capillary network as seen in the suprarenal cortex.

(10) The presence of lecithin in amounts closely approximating those characteristic of suprarenal tissue.

The proper classification of hypernephromata will doubtless depend upon a combination of histological and genetic methods, and recent work upon glycogen and lecithin indicates that some progress will be made along chemical lines. It also seems proper to tabulate what few clinical facts we can already offer from the cases already described by Grawitz and his followers since 1883. These facts are briefly as follows:

(1) The tumor occurs most frequently in the adult male.

(2) It is usually large and has a nodular surface.

(3) It is entirely within the kidney substance or it is partially subcapsular.

(4) The function of the kidney which contains it is interfered with either by destruction of renal substance or by its compression from the tumor mass, or by both these factors acting together.

(5) The tumor grows rapidly, is usually malignant, but may probably be benign in some instances.

(6) It usually involves the renal vein and sometimes the vena cava, and metastases are formed along the blood current, especially in the lungs, liver and bones, but do not involve the lymphatic channels.

Of the three cases which are here described, one occurred on the service of Dr. F. S. Watson, to whose kindness the writers are indebted for its use in this paper. They are also indebted to Dr. W. F. Whitney of the Harvard Medical School, and to Drs. F. B. Mallory and E. E. Southard of the Pathological Department of the Boston City Hospital, for assistance in the preparation of the material for illustrations.

CASE I. Man, forty-eight years old, entered the service of Dr. Paul Thorndike, Jan. 21, 1903. Family history good, except for one sister, who had a cervical adenitis. Thirty-five years ago patient had typhoid, and, four years ago, lead poisoning. Eight years ago had an attack of pain in the right kidney, and thinks he passed a small calculus at that time. Three years ago he began to notice blood in his urine. Bleeding was almost constant for six months, but occasionally disappeared for one or two days, and coincident with the disappearance of the hematuria he usually developed considerable pain in his right lumbar region, which was relieved by the reappearance of the blood in the urine. At the end of this six months he had more bleeding than usual for one week, and then the blood disappeared and the urine became clear. During the next six months he had attacks of hematuria occurring every one or two weeks and lasting about twenty-four hours. Between these attacks he had considerable pain of a dull, aching character in the right kidney region. This renal pain was relieved by the reappearance of hematuria, coincident with which the patient developed a pain referred to the corona glandis. He thinks that he passed clotted blood occasionally. At this time he was beginning to lose strength, gave up his work, but as the hematuria subsided temporarily, no operation was performed. He continued his mild attacks of hematuria until May, 1901, when he had a severe attack lasting one week.

*Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital.

This hematuria continued periodically until two months before entrance to the hospital, at which time the blood disappeared entirely from the urine. One week before entrance he again began to pass blood, and noticed a long clot of small diameter just before entering the hospital. At this time the tumor was discovered and the patient advised to come to the hospital for operation. During the three years he lost about fifty pounds in weight and failed considerably in strength.

Physical examination at time of entrance. — Large, well-developed man, emaciated and anemic. Pulses equal, regular and of fair volume and tension; rate, 100. Temperature, 99.6. Heart area normal, action regular, sounds not strong, but clear. Soft systolic murmur at apex not transmitted. Lungs normal. Extremities and reflexes normal. Abdomen symmetrical, full, lax and tympanitic, except in the right hypochondrium, where there is dullness continuous with that of the liver, the upper border of which begins at the fourth intercostal space and extends 9 cm. below the costal margin in the mammary line. Palpation reveals a hard, nodular, slightly tender mass which does not pulsate, but descends with deep inspiration. The lower border is ovoid in shape, with the convexity downward. Urine at entrance bloody, alkaline, specific gravity 1,026; urea, 30 gm.; albumin, a very slight trace. Much normal and abnormal blood and a few large, squamous epithelial cells. White count: 6,500. Hemoglobin, 60%.

The blood in the urine disappeared the day after entrance. Twenty-four hours' amount for the three days following entrance varied between 14 and 21 ounces. Temperature gradually climbed to 101.2 without apparent cause or change in the patient's condition. Urea remained at 30 gm. Operation on the fourth day after entrance; Dr. Paul Thorndike. Incision was six inches long, beginning just below the costal margin in the mammary line and extending downward over the tumor mass. Tumor was found covered with a network of large dilated vessels. Tumor region packed off from the general cavity and the peritoneum over the mass divided and clamped. The tumor, which was firmly bound by adhesions to the surrounding tissues, was freed and delivered. The mass continued down along the renal vessels and ureter. These were clamped *en masse* and the tumor removed. The ureter, which was much thickened by infiltrated new growth, was isolated and tied four inches from its upper end. The vessels were transfixed and tied with silk, but all the tumor could not be removed from them. The patient's condition became very poor, requiring considerable stimulation. The wound was closed with deep silkworm-gut sutures, except for two inches at its lower end, which was left open for the removal of gauze packing left in place to control the remaining hemorrhage. Duration of operation, thirty minutes. Subcutaneous injections, 1,000 c.c. salt solution. Packing removed on the third and fifth days. Daily dressings were made on account of some sloughing from the depths of the wound. The wound, with the exception of the sinus down to the stump of the pedicle, was healed by first intention and stitches were removed on the eighth day. Sinus persisted, but the patient improved rapidly, and was up on the seventeenth day and discharged on the thirtieth day after operation. At that time he had gained much in weight and general appearance. Sinus still persisted. From the time of operation the twenty-fours' amount of urine increased steadily, without the use of diuretics, and up to the time of discharge varied from 40 to 50 ounces. Urea remained about 30 gm. The specific gravity fell, and during the last week of his hospital stay was about 1,017. Nine months after operation patient was well, doing a fair day's work, and stated that he had gained over forty pounds in weight. A very small sinus still persisted.

Pathological report. — The mass retains roughly the general outline of the kidney. It measures 16 cm. by 14 cm. by 12 cm., and weighs 1,500 gm. The surface is everywhere nodular and covered by the kidney capsule. The larger of these nodules is about one-fifth of the whole mass and is near the upper pole of the organ. The capsule, which is much thickened by dense, white, fibrous tissue, strips with difficulty, and is so generally adherent as to bring away tissue with it. On section the kidney cortex is evident only in a few places, it being mostly replaced by nodules of various sizes, discrete and confluent, dark red or yellowish in color, with a yellowish white trabeculation, and firm to the touch. The area of the pyramids is occupied by a mass of pale yellow elastic tissue which is distinctly trabeculated and limited in outline, and contains many small areas of hemorrhage and a few areas of degeneration. The pelvis is enlarged and brilliantly injected. The calices are not distinct, but are occupied by bulging tissues due to the pressure of the tumor mass. Scattered over the inner surface of the pelvis are a few yellowish green areas of necrosis about the size of peas. Histological diagnosis: hypernephroma.

CASE II. Woman, fifty-two years of age, entered the medical side of the Boston City Hospital April 14, 1903, on the service of Dr. George G. Sears. Her father died of yellow fever, her mother of intestinal obstruction. She has one sister and one brother living and well, and one child now living and well at the age of twenty-six years. She has never suffered from uterine disorders, and passed her climacteric at forty-six years of age. She has always been well, and has had no illnesses during her adult life. On Dec. 15, 1902, she stumbled and fell, striking the lower part of her back. She felt lame for a few days, but was about and received no treatment for the injury. On Jan. 15, 1903, she began to have an indefinite attack of nausea, which lasted several days. She did not vomit and had no fever. She was up and about, but did not eat so much as usual. Feb. 1, 1903, she suddenly had a severe attack of sharp pain in the right side, which radiated toward the bladder. She immediately passed much bloody urine, followed by a continuance of a dull, aching pain in the right lumbar region. She passed considerable bloody urine several times during that night, and this hematuria continued for twenty-four hours. With the disappearance of the hematuria the pain in the back passed away. During the following six weeks the patient had several attacks of pain in the right lumbar region, radiating toward the bladder, but had no further attacks of hematuria. She lost twenty-five pounds in weight, and failed considerably in strength. A slight frequency and pain on urination caused her to consult Dr. C. M. Green, who recommended her admission to the hospital.

Physical examination. — A well-developed, fairly well-nourished woman, nervous temperament, with dark skin. Eyes and mouth negative. Pulses equal, regular, of good volume and tension. Heart area normal, action regular, sounds clear, with a soft systolic murmur at the apex transmitted into the axilla. Lungs negative. Abdomen symmetrical, full, lax and tympanitic, except in the right hypochondrium, where there was dullness, continuous with liver dullness, which extended to the level of the umbilicus in the mammary line. The lower border of the dull area was easily felt, was smooth and convex downward and descended with deep inspiration. There was no pulsation or tenderness over this area. The upper border of the liver dullness was at the sixth rib, and the left lobe of the liver did not appear enlarged. Neither spleen nor left kidney could be felt. Vaginal examination negative. Urine was pale, strongly acid, 1,016, a trace of albumin, much pus, and many squamous and neck-of-bladder cells; no blood. Blood: white count, 6,200; reds, 2,770,000. Hemoglobin, 25%. Patient was put to bed and received general tonic treatment. Many examinations for tubercle bacilli in the urine were negative, and differential blood counts showed nothing but moderate anemia. The patient improved only slightly under tonic treatment, and the general conditions remained the same. Although the tumor mass in the hypochondrium did not give acute symptoms, an exploratory operation was advised and finally accepted. The patient was transferred to the service of Dr. F. S. Watson, May 25, 1903. Operation, May 27, 1903; Dr. F. S. Watson. Incision seven inches long, beginning just below ribs, was extended downward over the tumor mass. Wound was later enlarged by an incision four inches long at right angles to the center of the first incision, outward between the ribs and the iliac crest. The peritoneum covering the kidney was filled with a network of dilated vessels. It was divided over the full length of the tumor, the bleeding points secured, and the cut edges sewed to the cut edges of the parietal peritoneum along the edge of the

wound, thus shutting off the general peritoneal cavity and forming a pocket in which the tumor lay. It was firmly bound by adhesions at its upper pole. These were broken, the pedicle was clamped, and the vessels tied separately. There was much thickened tissue along their course, but as the kidney could not be delivered through the wound its character was uncertain. The ureter was much dilated, very friable, and broke several times while being tied. About eight inches of it was removed, but the remaining portion of it seemed undoubtedly affected. The patient's condition was poor and would not allow of further procedure. The wound was closed with deep silkworm-gut sutures without drainage. During the operation the patient required stimulation by strychnine and 2,000 cc. of salt solution subcutaneously. Time of operation, one hour and twenty minutes.

During the first forty-eight hours after operation the patient's condition was poor, but gradually improved. For the first twenty-four hours after operation the amount of urine was only 13 ounces. This gradually increased, and four days later reached 35 ounces without the use of diuretics. The urea at this time was 1.3%, and there was no macroscopic and but little microscopic blood. Six days after operation there was evidence of acute suppuration in the center of the wound, and about 2 drachms of pus were evacuated. The patient's general condition steadily improved, and the wound, except for a sinus, which led down to the renal pedicle, healed by first intention, and the stitches were removed on the eighth day. Patient up on the twenty-eighth day. Urine remained constant in amount at 35 ounces, and the urea averaged 1.5%. There was at all times a slight trace of albumen with a specific gravity of about 1,012, and a few hyaline casts and small round cells. After getting up the patient gained rapidly in weight and strength, but a small sinus persisted in the wound in spite of frequent dressings. She was discharged seven weeks after operation. Sinus healed at the end of the sixth week. Her general condition at this time was excellent, and she felt as well as at any time during the past ten years. Urea at this time was 1.9%.



SECTION OF TUMOR, CASE II. Note encapsulation; stroma causing nodular appearance; areas of hemorrhage and necrosis; destruction of and encroachment upon renal tissue.



CASE II. By courtesy of Dr. F. S. Watson. Two-thirds actual size. Note the general reniform shape and nodular surface.

Pathological report. — (See plates I and II.) The mass retains the general outline of the kidney. It measures 12 by 9 by 8 cm.³ The external surface is generally nodular, with many points of injection from adhesions. The nodules vary in size from 3 to 6 cm. in diameter, and compose practically the whole upper half of the kidney. The capsule is thickened and firmly adherent over the nodular area. On section the whole upper half of the organ is occupied by a new growth, except for a small bit of renal tissue at the very tip. There is one large calyx in the lower half from which pyramidal tissue radiates. This area presents small, yellowish discrete nodules a few mm. in diameter scattered through it, and the cortex is poorly defined. The tumor mass, which occupies the whole upper half of the kidney, extends from just beneath the capsule into the pelvis of the kidney. It possesses a distinct capsule of its own. The tumor is generally yellowish in color, with areas of hemorrhage scattered through it. There is an irregular trabeculation of a firm lighter-colored tissue making many small compartments of yellowish or reddish yellow tissue. Some of these areas have degenerated and are soft, but for the most part the growth is firm and elastic. Histological diagnosis: hypernephroma.

CASE III. Man, fifty-two years old, entered the service of Dr. Paul Thorndike, Boston City Hospital, on Jan. 17, 1903. Father died of tumor of the abdomen, about which patient knows nothing. Mother died of cancer of the breast. Two brothers living and well. Patient has always been well. Habits always good. Present illness dates back fifteen weeks, at which time he began to have a dull aching pain across the lower back. Pain was constant and did not radiate. One week later the urine became bloody for forty-eight hours, during which time he passed a good deal of blood and several clots. These clots occasionally stopped the flow of urine and caused considerable pain, referred to the corona glandis. At the end of forty-eight hours the urine again became clear and remained so for three days, at the end of which time he had another attack of hematuria lasting thirty-six hours. Urine then remained clear for eight days and again became bloody for twenty-four hours. After this third attack the urine remained clear for fifteen days, when the present attack began; but this present attack had already existed for four days when the patient entered the hospital. During these attacks of hematuria there was frequency of urination (every ten or twenty minutes), and the passage of clots often stopped the stream of urine momentarily and caused considerable pain, referred to the corona glandis.

Between the attacks there was no frequency of urination, and there was no difficulty in starting the stream, the caliber and force of which were unchanged. The pain in the back usually disappeared with the onset of an attack of hematuria. Patient has never passed any stones or gravel and has none of the usual symptoms of vesical calculus. Has lost ten pounds in weight and considerable in strength during the past four months.

Physical examination shows a well-developed and nourished man with a dark but anemic skin, and a nervous temperament. Eyes, mouth, neck and thorax normal. Pulses equal, regular and of good volume and tension. Abdomen full, symmetrical, soft, tympanitic, not tender. Nothing abnormal found. Neither kidney could be felt; no tenderness nor spasm on deep palpation on either side. Urine at entrance was bloody, neutral, 1,008; albumen, a large trace; no sugar; urea, 2.02%. Much normal and abnormal blood and a few large squamous cells. White count, 12,000. Soft rubber catheter, 18 French, could be easily passed into the bladder, and bladder washed clear from blood, which showed that if the bleeding was from the bladder it was slight. The bladder capacity was about 11 ounces. The stone searcher revealed no stone and was followed by no increase of hemorrhage. The hematuria continued for four days after entrance, and he passed many clots, which were worm-like in shape, of small caliber, and varying in length from 1 to 5 cm., and were believed to be ureteral casts. During these four days of hematuria the twenty-four hours' amount of urine varied between 20 and 30 ounces, and was voided in small amounts about every hour. During the twenty-four hours after the disappearance of blood from the urine the patient experienced no lumbar pain, and the amount of urine jumped to 44 ounces and the urea 3.3. During the next twenty-four hours the urine again dropped back to 26 ounces and the pain returned to the back, but no blood appeared in the urine.

At this time the cystoscope showed a normal bladder wall with no areas of hemorrhage, no evidence of new growth, and no foreign body in the bladder. From the left ureteral orifice there projected a worm-like piece of blood clot about 2 cm. in length. The right ureteral orifice ejaculated a normal-colored urine at the usual rate. About six hours after the cystoscopy the urine became bloody, and contained an ureteral cast about 5 cm. long. Bleeding continued for about ten hours, and then ceased. The following twenty-four hours' amount was 20 ounces. Another cystoscopic examination five days after the first showed the same general features. There was no urine being ejaculated from the left ureteral orifice, and the right ureteral orifice was normal in appearance and ejaculated a clear urine. At this examination a segregator was introduced into the bladder and no urine obtained from the left side. That obtained from the right side was only tinged with blood, which was probably due to the previous examination.

Operation, Dr. Paul Thorndike. Left lumbar incision. Kidney found moderately adherent to the surrounding fat, from which it was separated and delivered into the wound. It was not enlarged, but presented several small nodules on its surface. One of these was cut across and a diagnosis of new growth was made. The pedicle of the kidney was clamped and the vessels tied separately and *en masse*, and the organ removed. External wound closed with interrupted chronic gut sutures, except for a an opening at the lower end of the wound, through which an iodoform wick was carried down to the stump of the renal pedicle. Time of operation, thirty-five minutes. Salt solution 1,000 c.c. subcutaneously immediately after operation. Wick removed two days later. No further blood in the urine. Urea twenty-four hours after operation was 2.9%. Twenty-four hours' amount of urine, from 20 to 37 ounces. Patient felt from the first that he was going to die, made no effort to rally, took his nourishment badly or not at all, gradually grew weaker, and died a week after operation. No obvious reason for death could be discovered.

Pathological report. — (See Plate III.) Gross specimen retains the general, normal shape of the kidney. The mass measures 12 by 6 by 5 cm. and weighs 142 gm. The surface is smooth and brownish in color. In the upper pole is a conical elevation 1 cm. above the surface and 3 cm. in diameter. It is covered with kidney capsule and is firm to the feel. The capsule strips easily, leaving a smooth surface everywhere except over this elevated area, where it is closely adherent, and when torn away leaves a firm, white, fibrous tissue beneath. On section the cortex is distinct and is slightly thicker than normal. In the upper pole, in the region occupied by a new growth, it is destroyed.

The pyramids are distinct, but those in the upper pole are destroyed by an area of new growth. This area is



CASE III. Four-fifths actual size. Note sub-capsular site; definite encapsulation; areas of hemorrhage and degeneration.

5 cm. in diameter, almost spherical in shape, generally yellow in color, and is definitely encapsulated by fibrous tissue 3 mm. in thickness. Throughout this area runs a thick stroma with areas of hemorrhages varying from .5 to 1 cm. in diameter, and with other smaller areas of necrosis scattered through it. The pelvis of the kidney is somewhat enlarged, and has thinned walls. Histological diagnosis: hypernephroma.

Since Grawitz' articles in 1883 and 1884, numbers of these and similar cases have been reported by French and German writers, but most of them have served as examples illustrating points in a varied controversy of a histological character, and although many of the cases have been reported with great care and detail, the literature of the subject up to date remains distinctly histological in character, and no efforts have apparently been made to indicate and formulate a clinical picture which may perhaps prove of diagnostic value. It seems proper, therefore, to make a brief résumé of such symptoms in this paper, and to base it upon the histories of reported cases as well as upon the three instances included in these pages. The symptoms which at once call themselves to our attention in these

cases are, recurrent attacks of hemorrhage associated with frequency of urination, and often profuse enough to lead to the passage of clots, which in their journey down to the bladder sometimes get caught, stop the stream of urine (often for hours or days, as shown by diminishing amount of urine) and cause pretty severe pain, usually referred to the corona glandis. Between these periods of hemorrhage are periods characterized by no frequency of urination, but by a diminished amount of urine and urea, and a marked pain in the back, persisting continuously and disappearing only with the onset of a new attack of hematuria. This condition is in marked contrast to the pain in cases of renal calculus. Calculus pain is, of course, coincident with the blood which the irritation of the calculus causes. This alternation of periods of hemorrhage and frequency with periods of no hemorrhage and no frequency, but of marked pain in the back, have seemed both distinct and constant enough to merit mention and emphasis; and these alternating periods had a beautiful illustration by the cystoscopic views obtained in Case III, where the clot obstructing the mouth of the left ureter could be readily seen, coincident with the sudden cessation of hematuria, marked drop in the twenty-four hours' amount of urine, marked diminution in the amount of urea and a return of the lumbar pain. Then a few hours later there was an equally sudden return of the hematuria and the passage of a ureteral cast of blood clot.



Stained with methylene blue and eosin. X 25 diam. Note thin capsule with lymphoid cell infiltration below; wide vascular spaces; general tubular or adenomatous appearance; areas of degeneration above (pale staining).



Stained with methylene blue and eosin. X 80 diam. Note vascular stalks; tubular appearance emphasized by lighter spaces (in part due to cell degeneration) lying outside well-nourished cells immediately facing capillaries.



Stained with methylene blue and eosin. X 200 diam. Note oval or polygonal shape of cells; preservation of their rim of cytoplasm; deeply staining nuclei sometimes lying upon cytoplasm threads; the perinuclear, lightly staining spaces, often filling the whole cell, and somewhat characteristic of hypernephroma.

The accompanying plates illustrate beautifully characteristic points of both the gross and microscopic pathology of these growths. These points, already mentioned in the text, are briefly as follows:

(1) An affected kidney may not be much increased in size, but is generally very large.

(2) The general outline of the organ is usually retained, and the surface is almost always nodular, although occasionally there is no external evidence of the growth.

(3) The new growth is either encapsulated within the kidney substance or just below the kidney capsule.

(4) On section the tumor tissue is generally yellowish, with a firm and distinct stroma, which gives the growth a nodular appearance. Some of these nodules usually show areas of hemorrhage and degeneration.

(5) The kidney tissue is either destroyed or pressed upon and distorted by the new growth.

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PAPILLARY ADENOCYSTOMA OF THE THYROID AND ACCESSORY THYROID GLANDS.*

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THE papillary tumors of the neck are of great importance to the surgeon, on account of their tendency to rapid local recurrence. Their histological development and their point of origin have been the source of much discussion. The six cases reported here are interesting in showing a true papillary adenocystomatous growth originating in the thyroid tissue from three different sources, namely, the thyroid gland itself, lobules of thyroid tissue directly connected with the gland, and accessory thyroids entirely separate from the thyroid itself.

The name accessory thyroid is used to designate those small isolated masses of true thyroid tissue which often occur in the neck near the thyroid gland. They are apparently similar to the accessory spleens found in the neighborhood of that organ.

These bits of thyroid tissue are liable to occur, as the diagram shows, either running up from the isthmus, representing persistent bits of the pyramid of Lalouette, or as the remains of extensions from the inferior or superior horns, or just posterior to the lateral lobes, lying alongside the pharynx and esophagus. Occasionally they may occur at the root of the tongue, within the larynx or even further from the main gland. In the examination of five hundred cases Gruber [3] found that the occurrence of accessory thyroids was approximately as follows — the superior was present in one out of twelve individuals, the inferior in one out of ten, and the posterior in one out of five. The accessory thyroids are histologically like the thyroid gland, and are not to be confused with the parathyroids, which are of very different structure. We must also distinguish the true congenital accessory thyroids from lobules of thyroid tissue, which may be the seat of encapsulated tumors analogous to the pedunculated tumors of the ovary. Berry [1] thinks that most of the so-called tumors of an accessory thyroid have, in reality, developed in the thyroid gland itself, and are connected with the main organ by a more or less well-defined pedicle. The anatomical studies of Paltauf [4] and Gruber [3] seem to support this view.

The accessory thyroids have been recognized as possible points of origin for all the different varieties of tumors, which may affect the thyroid gland itself, at least since Schlütter [5] in 1857

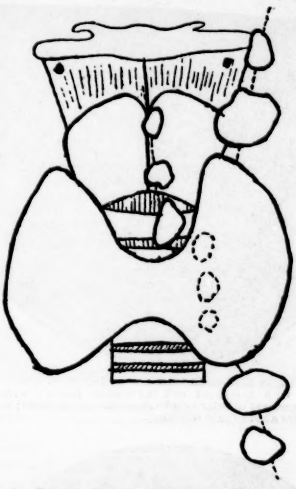


FIG. 1 (after Berry). Larynx, trachea and thyroid gland, showing (on the left side only) the most common position in which the accessory thyroids are found.

wrote "De Struma Cystica Accessoria." Virchow,[6] Schnitzler,[7] Braun,[8] Hinterstoisser,[9] Madelung [2] and others have also reported cases of tumors of the accessory thyroids.

The thyroid tissue may be the seat of neoplasms, which differ widely in histological structure. Hinterstoisser [10] recognized 17 kinds of malignant goiter in 50 cases. We must distinguish those cystic goiters, resulting from softening or hemorrhage in a simple adenoma, followed by secondary papillary ingrowths from the cyst wall, which only occupy a small part of the cyst cavity, from the true papillary adenocystoma of the thyroid. Some of the forms of fetal adenomata, which show only a very slight tendency to papillary formation in small areas, cannot be considered as truly belonging to this type of tumor.

Although I have reported this first case before,[11] it is included here to show the relation of this series of cases to the thyroid gland.

* Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital.

Case I. S. 01.340, female, forty-nine years old. Admitted to hospital May 28, 1901. Patient had much trouble from sore throat about twenty-five years ago, and since then her neck has remained swollen. Year after year the tumor gradually grew in size, but more rapidly in the last two years, until it now occupies the whole front of the neck. During the last seven years she has had more or less discomfort at night, with stiffness of neck, and has had some palpitation, no headache or dizziness, no loss of weight, no difficulty in breathing or swallowing.

Operation by Dr. F. B. Lund. After peeling back the skin and platysma, and ligating the superior and inferior thyroid arteries on the right, the capsule of the cyst, which was covered with numerous large veins, was incised and the tumor quickly and easily enucleated. It formed nearly the whole right lobe of the thyroid. The patient made a rapid recovery.

Pathological report. The specimen, which has been cut in halves, consists of a tumor mass weighing 680 grams. It measures 11 x 12 x 9 cm. It is covered with a firm fibrous capsule. There is no apparent point of attachment. On section a moderate amount of thin, colorless fluid escapes. There are a great many cystic spaces separated with white fibrous walls. These spaces in many places contain clear fluid. The cut surface is divided by broader fibrous bands into rounded areas, which are subdivided by thin fibrous walls. A greater part of these small alveoli are filled with soft yellowish material, which stands above the surface like small plugs. In the center the cysts are large and filled with fluid. The papillary structure is very evident.

Microscopical examination. The capsule is formed of dense fibrous tissue. The growth consists entirely of large and small cystic spaces filled with papillary ingrowths and occasional small areas of simple adenomatous structure.

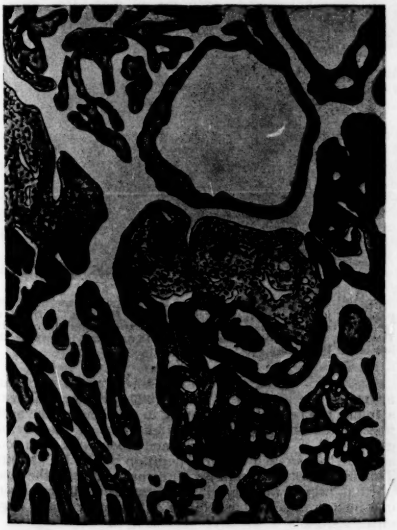


Fig. 2. Typical papillary growth in Case I. Cells mostly like those of normal thyroid. Occasional colloid follicles. In the center are seen some of the large cylindrical cells developing next to the low cuboidal epithelium.

These cystic spaces are only separated from one another by a very thin wall, and intercommunicate to form larger, irregularly lobulated spaces, much more than is evident in the cross section. Most of these spaces and follicles are empty, having been filled with clear mucoid fluid. Very rarely there is seen a follicle lined with flat, poorly developed epithelium, and containing eosin-staining homogeneous material, which is colloid.

The cystic spaces, the papillary ingrowths and the simple follicles are all lined with a single layer of epithelium. This is in most places normal, healthy looking thyroid epithelium of the cuboidal type. There are however, numerous places throughout the growth where the lining of the papillæ suddenly changes in type, and next to the cuboidal epithelium we see a profuse growth of cylindrical epithelial cells (see Fig. 3). Instead of the smaller cell, with its round nucleus, we find a cell three times the size, rich in protoplasm, and containing a single large oval vesicular nucleus, in which there are numerous chromatin granules. There are some small follicles, showing the same size of epithelium, and between them occasionally there is a small solid group of large epithelial cells. Mitotic figures are not numerous in these cells. The illustrations of this tumor show both these types of growth.

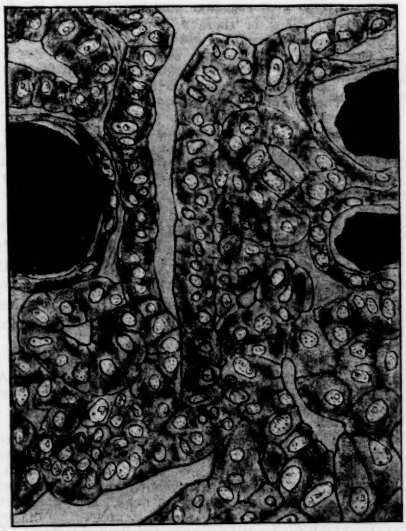


Fig. 3. Part of Fig. 2 more highly magnified. Characteristic proliferating cells of Case I, having large vesicular nuclei and much cytoplasm. Some colloid follicles distended and lined with the very low epithelium typical of the "colloid goiter," and other smaller follicles lined with normal cuboidal epithelium.

There is very little stroma throughout the growth, and it shows only in places slight hyaline and myxomatous degenerations, though it is often considerably distended with fluid to form edematous tissue in large areas of the tumor. The blood vessels are fairly numerous and their walls show very little change.

The second case is similar to the first, but not nearly as extensive.

Case II. S. 02.309, female, forty years old. In the hospital in May, 1902. Eighteen years ago noticed slight swelling in her neck, which has increased very slowly, but has caused no especial inconvenience until the last six weeks. At this time she had a sudden attack of suffocation. For an hour she had great difficulty in breathing. No trouble since. No exophthalmos, nor tachycardia.

Some hard nodules could be felt in the region of the isthmus, and in the right lobe were other hard nodules.

Both lobes seemed to be enlarged to twice their normal size. Operation by Dr. J. C. Munro. Ether at first produced marked strangulation, so chloroform was used, with the patient in erect posture. Upper and outer portion of right lobe was partly freed and the apex left behind. Isthmus firmly attached to the trachea, which was found to be pinched to a narrow triangle by the gland, and after freeing it, respiration improved much. Upper portion of left lobe was not removed.

The specimen removed consists of three portions of grayish-red tissue of rather soft, gelatinous consistency, measuring respectively (1) 7 x 5 x 4 cm.; (2) 5 x 4 x 2 cm.; (3) 6 x 3 x 2 cm. On section grayish nodules are revealed, averaging from 1 to 3 cm. in diameter and being somewhat more firm than the rest of the tissue.

Microscopical examination. There are various nodules separated from one another and the surrounding glandular tissue by broad connective-tissue septa. The follicles of the thyroid gland are apparently normal, moderately dilated and filled with colloid. Most of the nodules consist of an adenomatous growth. The follicles vary in size, some being filled with colloid, many having little or no central spaces, and being lined with rich epithelial cells, having large oval vesicular nuclei. There are in places small collections of these cells forming an apparently true adenocarcinomatous growth.

One of the larger nodules, separated from the rest by a wall of fibrous tissue, is almost completely filled with closely packed papillary ingrowths and a few single follicles. These papillæ branch very complexly, and are covered by a single layer of high epithelial cells. There is an occasional follicle containing colloid. The stroma of the capsule and papillary masses is infiltrated with plasma and round cells. This part of the tumor shows a similar and nearly as complex papillary growth as was seen in the first case.

In the third and fourth cases the tumors probably developed either from a lobule of thyroid tissue, or having developed in the gland itself have become pedunculated as they increased in size and pushed out from the gland. At least in these two cases the growths were in direct connection with the main organ.

CASE III. S. 02.359, male, forty-six years old. Admitted to hospital in June, 1902. Tumor has been growing gradually for nine months. It has caused no subjective symptoms.

On the right side of the neck, just opposite the cricoid cartilage, between the anterior edge of the sterno-mastoid muscle and the median line, is a swelling one inch in diameter. It moves distinctly with deglutition. Operation by Dr H. W. Cushing. A dense, firm tumor very adherent to the thyroid gland was exposed. With considerable difficulty it was separated from the gland. The specimen consists of a mass measuring 3.5 x 3.5 x 2 cm. It is firm, nodular, and deep red on the surface. On cross section it is yellowish gray, soft, granular, and pulpy. There are many fibrous bands throughout the growth.

Microscopical examination. The growth consists of many large and small cyst spaces separated with broad bands of connective tissue. These spaces are filled with very numerous, irregular papillary ingrowths, and occasional scattered follicles containing colloid. The epithelial cells of the growth form a single layer covering the papillæ and lining the cyst spaces and follicles, but they are mostly two to four times as high as the normal thyroid epithelium, are richer in protoplasm and have large oval nuclei. Some places, however, are covered with low cuboidal epithelial cells. At the border the growth seems to be invading the thyroid tissue, which a short distance away appears normal. There are many small alveoli filled with the papillary tumor growth, pushing out into the surrounding tissue. These alveoli have a considerable connective tissue wall, from which there are bands radiating into the adjacent thyroid tissue. There is some infiltration of round and plasma cells into this stroma and in places it shows extensive hyaline degeneration. Throughout the growth there are all kinds of epithelial cells forming a gradual transition between the lowest cuboidal and high columnar cell.

The character of the extensive papillary growth in this case is shown in the illustration, which also well represents the structure of the small papillary development in the previous case. The facts that the growth in this third case began as a small nodule at one side of the thyroid gland, and that at operation it was found to be very adherent to the thyroid, make it possible that it may have developed from an accessory thyroid, and later, through some chronic inflammatory process, have become adherent to the main organ; or that it originated in a bit of thyroid tissue that formed a small lobulation of the thyroid. The latter hypothesis seems the most probable.

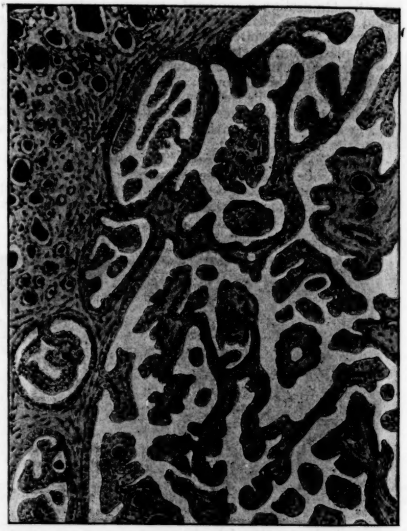


FIG. 4. Case III, showing part of large cystic space filled with papillary growth and scattered colloid follicles, surrounded by much connective tissue infiltrated with round and plasma cells. There are also smaller spaces filled with papillary growth in the border of the tumor.

CASE IV. S. 02.246, female, thirty years old. Admitted to the hospital in April, 1902. For several years a tumor has been slowly growing in the front of the neck, just to the outer side of the right lobe of the thyroid gland. It is freely movable, and about one inch long and one-half an inch wide. Operation by Dr. J. C. Munro. Tumor enucleated except for a narrow pedicle at the inner portion, which was ligated with catgut. A cyst about one inch in diameter developed at the inner lower angle of the right lobe of the thyroid close to the isthmus.

The specimen removed was a mass of soft red tissue, the size and shape of a pecan nut. Surface dark red, dotted with small black areas, size of a millet seed. Cut section is pale gray, soft and moist. Bands of fibrous tissue run in various directions, but otherwise the cut surface is for the most part homogeneous. There are several areas of soft, granular, yellowish white material.

Microscopical examination. There is a definite connective tissue capsule surrounding the growth. The periph-

ery is a simple adenoma with a small amount of stroma, in which are numerous small blood vessels. The adenomatous structure shows various types: a few moderately large follicles containing colloid, many smaller follicles with small lumen and no colloid. Between these are all gradations. These spaces are all lined with a single layer

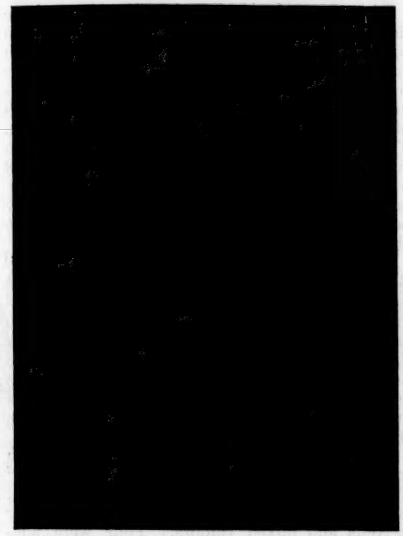


FIG. 5. Case IV, showing the simple adenomatous structure of the periphery, with its small follicles and irregular spaces, and a part of the papillary growths of the center.

of columnar epithelium, which is slightly higher than the ordinary epithelium of the thyroid. Throughout this edematous portion there are long slits or spaces, with a similar epithelial lining, which divide the tissue up into irregular lobes. Near the center these spaces become larger and more irregular, the simple edematous structure becomes less evident and in a major part of the tumor we find an extensive papillary development. The cells covering these papillary masses are very similar to those of the rest of the growth, being only a little larger. They do not show as many variations as were present in the first case reported. There is no stroma in the papillary portion. It contains numerous vessels distended with blood, and is in places edematous. In some of the spaces extensive hemorrhage has taken place. The cyst removed from the right lobe of the thyroid shows several spaces lined with cuboidal epithelium. This was in no way connected with the rest of the tumor.

This tumor, being freely movable and to one side of the thyroid, was found at operation to be connected by a narrow pedicle to the main organ, and has probably developed from lobule of the thyroid gland.

The other two cases are tumors arising entirely separate from the thyroid gland, both of which show a papillary growth almost exactly like that of the first case and occasional colloid follicles.

CASE V. S. 02.680, female, eighteen years old. Admitted to hospital Oct. 10, 1902. First noticed a small lump on the right side of her neck two years ago. This increased in size and became tender and painful. About a year ago it was operated on. Shortly after the wound closed the tumor began to grow again. At present it is tender and painful. On the neck, just behind and below the right ear, is a tumor about the size of an English walnut, which is firm but slightly fluctuant. It is not adherent to the skin, though firmly connected with the deeper structures. Operation by Dr. Paul Thorndike. As the tumor was thought to contain fluid a small incision was made over the mass. On deeper incision considerable hemorrhage occurred. The swelling was found to be a very vascular new growth, with no evidence of suppuration. A very vascular tumor with a definite capsule was then readily freed from the surrounding tissues.

The pathological examination states that it is a firm, oval tumor, measuring 5 x 3.5 x 2.5 cm. There is a distinct capsule closely associated with muscle at one side. On section it is gray with a few small yellowish areas, and one large red area. It is granular and pulpy.

The patient returned to the hospital two weeks later on account of pain in the swelling of her neck. The record says that there is considerable fullness in the right side of her neck, extending from almost the median line to back of the sterno-mastoid muscle. On palpation a smooth elastic mass is felt, made up of several nodules. It does not seem to be in any way connected with the thyroid, trachea or skin. Thyroid gland is apparently not enlarged. Several enlarged glands are felt in the left neck. A further operation attended by considerable hemorrhage resulted in the removal of two very vascular encapsulated tumors. They each measured 4 x 3.5 x 2 cm., and were similar in structure to the one previously removed.

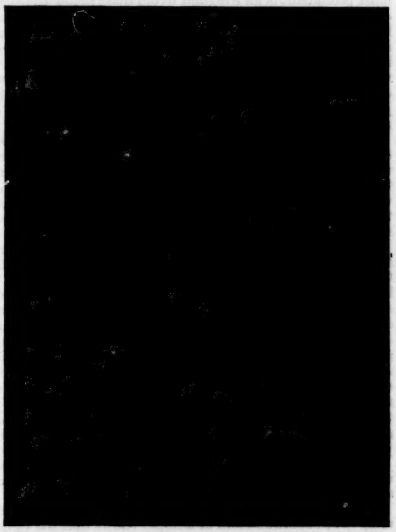


FIG. 6. Case V. Rich papillary growth in numerous small spaces. Cells rapidly multiplying. Many colloid follicles. In upper right corner is part of one of the small areas simulating carcinoma.

Microscopical examination. The tumor is made up of small irregular spaces lined with a single layer of columnar epithelium. Owing to the fact that these spaces are encroached upon by very numerous and intricately branched papillary ingrowths from the walls, they vary infinitely in size and shape. The spaces are either empty or partly filled with mucoid material, and many of the smaller ones contain colloid. In very many places there is considerable proliferation of the epithelial cells between the spaces. These cells are quite large and have large

vesicular nuclei, which occasionally show evidences of mitoses. In some places the lumina of the follicles have become small and are filled with proliferating epithelium, and the growth resembles a true carcinoma with very little stroma (see Fig. 6). The tumor is rich in blood vessels, and shows no evidence of degeneration. Some of the papillary growths in the larger cyst spaces are distended with edema.

Although none of the nodules removed in this case showed lymphoid tissue, it seems probable that at least some of the growth developed by extension to the adjacent lymph nodes, as is evident in the following case. It is rather hard to believe that there were several separate accessory thyroids as points of origin. Gruber [3] in his anatomical notes states that only once in twenty times where the accessory thyroids were found present was there more than one, and he did not in any case find more than two present, these being on opposite sides.

CASE VI. S. 99.470, male, fifty-eight years. Admitted to hospital in August, 1899, in the service of Dr. Paul Thorndike. Two years before noticed a small swelling in the right neck, which has rapidly increased in the last ten months. Larynx and trachea are pushed apout half an inch to the left side. Entire side of neck is now occupied by four definite and distinct tumor masses. The most prominent is an irregular ovoid mass below the angle of the jaw. Next largest is below and towards the median line and less movable. Two other smaller ones are just above the anterior third of the clavicle. In the left neck is an indefinite tumor the size of a cherry. The skin is not adherent to these growths. The general enlargement of the axillary, epitrochlear and inguinal lymph nodes justified the clinical diagnosis of Hodgkin's disease or malignant lymphoma.

At operation an ovoid nodular mass of fairly firm consistency, measuring 9 x 5 x 3 cm., was removed. There were certain nodules that had a firmer consistency than the rest of the mass. The cut surface was dark red, somewhat soft and granular. The patient failed rapidly during the operation, which was stopped, and he died in a very short time.

At post-mortem examination the right side of the larynx showed a shallow depression from pressure of the growth. On the right side of the trachea and closely adherent to it is an enlarged gland extending from the cricoid 6 cm. downwards. The trachea is not distorted. Below this and anterior to the trachea, not closely adherent to it, and not invading the surrounding tissues, are two other glands, one measuring 3 x 2.5 x 2 cm. and the other slightly smaller. They are symmetrically enlarged, firm and non-fluctuating. On section the surface is pinkish gray, granular and very friable, and the soft material is easily scraped off with a knife. There are two more glands about the size of the others beneath the sutured wound. One is firm and the other hemorrhagic and pulpy. The examination of the viscera shows nothing of unusual interest. The inguinal lymph nodes are the seat of an acute inflammatory process.

The microscopical examination of the new growth removed at operation and at autopsy shows that the tumor is made up of several very large cystic spaces surrounded by thick vascular connective tissue bands, in which there is considerable infiltration of lymphoid and plasma cells. These spaces are completely filled with a very intricately developed papillary growth. There is a moderate amount of stroma. The lining of the spaces is made up mostly of high columnar epithelium, but in places there is a low, flat epithelial layer. Very rarely there is seen in a section a few small round spaces surrounded by a thin layer of protoplasm. In one section was seen a group of 8 or 10 of these spaces lined with a definite cuboidal epithelium, and apparently filled with colloid. In the surrounding connective tissue capsule there are small spaces with papillary ingrowths and other alveoli filled with large epithelial cells.

Some of the lymph nodes removed at the autopsy are invaded by a new growth of similar nature consisting of cysts filled with a delicate branching papillary growth. The cysts and papillæ are lined with cylindrical epithelial cells, which have large oval nuclei and finely reticulated cytoplasm. This growth is almost exactly like that in the third case.

There is no doubt that these six tumors have developed either from the thyroid gland or from bits of thyroid tissue. In every one of them true thyroid follicles containing colloid were present, and the growth was made up of cells varying gradually from the typical cuboidal cells of the thyroid to a true cylinder epithelium. The only other tissues in the neck from which such a histological structure could be expected to develop are the remains of branchial ducts, and in that case the epithelium would probably be ciliated and at least would not show the character of the thyroid epithelium.

Gutmann, [12] Koch, [13] Volkmann, [14] Bruns, [15] Berger [16] and others have reported cases that were supposed to be developed from branchial ducts, and some of them showed tendency to papillary formation. Berger and Bruns think that most of them are developed from thyroid tissues, and Gutmann, in writing on the development of the so-called carcinoma of the branchial duct, says it develops from the accessory thyroids, and calls it a struma carcinomatosa accessoria.

It hardly seems possible that this type of growth could develop from the salivary glands. Nasse [17] collects fifty-eight tumors of the parotid gland, mostly endothelioma, angiosarcoma, alveolar sarcoma and mixed tumors. Four were adenoma, but the cells were typical of the parotid and portions of the salivary gland were seen within the capsule of the tumor.

I have found reported in literature only nine other cases which can possibly be called true papillary adenocystoma of the thyroid or accessory thyroid glands. Wolfler [18] in 1883 first described this type of tumor in the thyroid gland. The first case that he reported was operated on by Billroth in 1873, by Wölfler in 1878, 1881 and 1900, and two years ago Smoler [19] wrote the clinical history of the case during the preceding twenty-seven years. It was treated by iodine injections for several years and when first extirpated it was a cyst of the left lobe of the thyroid, one-third of which was filled with papillary ingrowths. It is possible that previous aspiration and hemorrhage had destroyed a much more extensive papillary growth, which may have been originally present. There were recurrences with great papillary proliferation but no metastases. It showed all the three types that he thinks are present in these tumors; namely, normal thyroid tissue, papillary cystadenoma and malignant adenoma, *i. e.*, adenocarcinoma. The chief part was papillary; the epithelial proliferation was in the stroma.

Wölfler's [18] second case was a tumor the size of a man's fist, showing papillary formation in the central part. The periphery was made up of solid cell masses, long cell strands, and some adenomatous structure. There was no recurrence

in this case, as it was probably wholly removed.

Zahn [20, 21] reports two cases; one, in a dog, is uncertain, as the thyroid of the dog normally shows some papillary structure. The other, in a man, fifty-five years old, was of four years' duration and attained the size of an apple. It developed just between the angle of the jaw and the left sterno-mastoid muscle. He describes it with three other cases as developing from a branchial duct, but it undoubtedly originated from a bit of thyroid tissue. Plauth [23] and Smoler both agree with this idea. Both lobes of the thyroid were very much enlarged, causing considerable dyspnea. The adjacent lymph nodes were not affected. The structure was a true papillary adenocystoma.

Jores [22] reports an accessory thyroid tumor of four years' growth, in a man twenty-eight years old. There were four small nodules, two on each side of the sterno-mastoid muscle. They consisted in the periphery of very cellular spaces filled with cylindrical epithelium, separated by a hyaline degenerated stroma. The whole center was made up of rich papillary vegetations covered with cylindrical epithelial cells. There were some follicles containing colloid.

Plauth [23] reports a case in a farmer seventy-two years old, which in three years' duration reached the size of a walnut. The small growth under the chin was treated with iodine injections, and in 1894 was extirpated. It was thought at first to be benign, but on further examination was called a sarcoma or at least a malignant growth. The cyst wall was probably not wholly removed, and it refilled with blood in two months. In January, July and December of 1895 there were further operations for other small nodules. The several nodules removed were each surrounded by capsules of connective tissue infiltrated with round cells. Cross section showed papillary ingrowths into the large cysts and in the walls numerous small cysts filled with papillary vegetations. So he considers it a multilocular cyst, the large cysts being formed by the confluence of the smaller ones and distended by hemorrhage. He thinks this tumor has developed from thyroid tissue and Smoler also includes it in that class, though he says one cannot state positively that the starting point was not in a branchial duct.

Kapsammer [24] reports a case of true papillary adenocystoma, probably originating from an accessory thyroid, as the main gland was found to be normal. His illustrations show a growth almost exactly like that in the third case reported in this article. It occurred in a man fifty-eight years old, was of six years' duration and beginning as a small node at the inner end of the clavicle became as large as three men's fists.

Ehrhardt [25] says he has seen two cases of tumors of the thyroid in which the whole growth has become a conduit of intercommunicating cysts filled with papillæ. He called them cystocarcinoma papilliferum. Both developed in cases of goiter of long standing, and attained large size. They were malignant adenomata showing some papillary structure. One of these cases recurred and showed invasion of the lymph nodes.

Günzler [26] reported recently a case of papillary cystadenoma of the thyroid with metastases in the glands. It is the case of a man twenty-nine years old, who had noticed for two years in his left neck close to the anterior border of the sterno-mastoid muscle a tumor about the size of a goose's egg. Two months after the operation other tumor masses were removed posterior to the sterno-mastoid. These were lymph nodes showing a similar papillary growth. No recurrence had taken place in the following nine months. He calls it a tumor of the thyroid itself, but its situation suggests an accessory thyroid as the point of origin.

Of these nine cases, the first one of Wölfler, and those of Zahn, Plauth and Kapsammer, Jores and Günzler represent perfectly typical papillary adenocystomata, similar to five of the cases reported here.

The cases of Ehrhardt are apparently the same type as our fourth case in which the adenomatous growth is more prominent. The second case of Wölfler is much like a specimen sent me by Mr. James Berry and is really not an adenocystoma. It is true it has a central space or spaces filled with papillary growth, but the structure is more that of an alveolar carcinoma than the adenocarcinoma of this type of tumor. Smoler does not include it in this group. Though it does not fully conform to the type, in showing the three kinds of tissue that Wolfler recognizes as typical of the papillary adenocystoma of the thyroid, I have seen fit to consider it here, as it may represent some stage in the development of these papillary growths.

Several cases have been reported that must be considered doubtful. Pollard's [27] case probably belongs to this group, though he thinks that the papillary ingrowths developed secondarily in the cystic cavity. The cyst was the size of an orange, and the several villous growths only projected in from its lower part. There was, however, another nodule consisting of smaller spaces filled with a branching stroma covered with a single layer of epithelium, and there were occasional follicles containing colloid. Very likely this was a true papillary adenocystoma and in the larger cyst the papillary growth had been destroyed by previous aspiration and hemorrhage, as may have been true in Wölfler's case.

Other cases have been observed and only partially reported by Hinterstoisser,[9] Carranza,[28] Cornil,[29] Sulzer,[30] Barker,[31] Berry [1] and Jackson Clarke.[32] The cases of Hinterstoisser, Barker and Clarke very probably belong in this group but cannot be positively included.

Thus there are on record only 9 cases which can be included in this class: 4 of the thyroid and 5 of an accessory thyroid. The 6 cases reported here make 15 in all. Even considering the rarity of this type of tumor in thyroid tissue and the few cases here collected, there are several points which

we can point out quite clearly as characteristic of all these cases. The slow development and long duration is noticeable in all the cases; those of only two or three years' growth were invariably very small nodules. In none of the cases was there any cachexia. The great rarity of metastases and the tendency to rapid recurrence is very evident.

The question of how in the thyroid, an organ in which during development and post-fetal life there is no cylinder epithelium, a cylinder cell adenocarcinoma develops, is only explained by the supposition that there is a metaplasia of the cuboidal into the cylinder cells. The different kinds of cells shown by these tumors represent all gradations between these two types.

The papillary development in these tumors probably is due to the same conditions as occur in similar tumors of the kidney and ovary. According to Ziegler [33] we may consider the papillary cystic growths in general as tubules or spaces sacculated outwards, leaving thin bands extending into the central space.

Ribbert,[34] however, offers the clearest explanation of the development of papillary growths by showing that this is the only way in which an extensive proliferation of an epithelium can be spread over a large surface so as to receive sufficient blood supply.

Thus we have here a rapid multiplication of the epithelial cells, which receive better nourishment if they do not pile up in several layers, and so this single epithelial layer is folded in and the capillary vessels and surrounding stroma follow these folds to bring nourishment.

After studying these tissues microscopically it seems most probable that Wölfler is right in saying that this hypothesis, that the proliferation of the epithelium takes place first, and the stroma follows it into the papillæ, is true in the papillary adenocystoma of the thyroid. Ehrhardt says he is unable to confirm this view, and that he must conceive the origin of the papillæ as the performance of the stroma. In most of these cases, however, the proliferation of the epithelium is the chief and primary part of the growth and the stroma is very poorly developed.

In the fourth case (Fig. 5) we have a growth which perhaps may be said to be becoming papillary, showing as it does all the gradations, from the simple round follicles of the adenoma to the long slits, and the very irregular cystic spaces. The structure of this tumor would suggest that the papillary development was here the result of a rapid proliferation of the epithelium, together with some distension of the follicular spaces with serous fluid; this taking place within a firm capsule necessarily causes the lining membrane of epithelium to be infolded in order to increase the surface which the single layer of cells may cover and still be well supplied with blood vessels. It is true that in all of our cases these conditions were present, and that there is only in places more than a single layer of epithelial cells lining the cyst spaces. If the cells, while rapidly increasing in number, do not pile up in several layers, the surface must be increased to accommodate them and this may possibly explain the development of this system of spaces filled completely by the infolding of the lining membrane, which offers the greatest increase in area possible.

In Figure 4 we see how this infolding is taking place in the small spaces. Their walls may later break down, if there is not too much stroma, adding to the size of the larger spaces. In Figure 6 we have a case where there are many small spaces instead of one large one, and if our hypothesis is correct, this may be due to the greater amount of stroma which is extremely well supplied with blood vessels and has not become destroyed.

The tendency to cyst formation is much increased by this papillary development. The stroma of these tumors is not often the seat of hyaline degeneration; but it is sometimes myxomatous, though not as commonly as in similar growths of the ovary.

It is an open question whether to consider these papillary adenocystomata as typical malignant growths or not. Hansemann [35] only recognizes these growths in the ovary, kidney and testicle, and classes them as malignant.

The malignant tumors of the thyroid are not yet well classified, and between the types of benign and malignant adenoma we find manifold transitions. It is not uncommon in literature to see cases of "Benign metastasis forming goiter" or "Metastasis from normal thyroid." Honsell [36] has collected eleven similar cases. The papillary adenoma of the thyroid belongs between the benign adenoma and the adenocarcinoma. Pratt [37] classes it among the benign growths, calling it mildly malignant. If we compare it with the true carcinoma and sarcoma of the thyroid it is surely mildly malignant. In 94 autopsies collected by Ehrhardt in which there was either carcinoma or sarcoma of the thyroid, there were only 14 cases in which there were no metastases.

There seems, however, to be no histological reason, except their thick capsule, why these papillary growths should not be very malignant. Wölfler [19] expressed much surprise that in the twenty-seven years' duration of his case there had been no metastases. Only three of the cases, however, show metastases: those of Günzler and Ehrhardt, and the last case reported in this article. It may be true that the recurrence in the fifth case reported here and that of Jores, which is similar, were not separate nodules in one or several accessory thyroids but were lymph metastases. As there was no lymphoid tissue present in any of the nodules we cannot say positively that they were metastases. The metastases in this group of tumors were invasions through the lymph channels, and not the blood infections which are by far the most common in malignant thyroid growths. Thus we have a relatively benign tumor which occasionally at some future time may become dangerous, though never leading to cachexia.

The papillary adenocystomata show a certain malignity, in that they tend to recur easily and

very rapidly if they are extirpated and there is even a small bit left behind. Similarly this class of tumors in the ovary, if ruptured within the peritoneal cavity, is liable to scatter the bits of tissue which will lead to a number of new growths on the peritoneum. In operation these tumors should be thoroughly and completely removed, if possible without incising the capsule surrounding the growth. Every precaution should be taken to prevent scattering in the wound bits of tissue which may become the germs of recurrence. Generally the operation is difficult, as the vessels and deep structures of the neck may be involved, and it may be impossible to remove all the new growth. In those cases in which the operation was incomplete, almost every time there has been recurrence. In many cases where a complete enucleation of the growth was supposed to have been done, there has been no recurrence.

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[29] Cornil: Sur le développement de l'épithéliome du corps thyroïde. Arch. de. Physiol., 1875.
[30] Sulzer: Quoted by Ehrhardt.
[31] Barker: Cystic Accessory Thyroid. Trans. Lond. Path. Soc., Vol. xviii, 1896.
[32] Clarke: Clinical note in Lancet, Lond., January, 1896.
[33] Ziegler: Lehrbuch der allgemeine Pathologie, 1895, Bd. 1, s. 444.
[34] Ribbert: Lehrbuch der allegemeine Pathologie, 1901, s. 518.
[35] v. Hansemann: Die microscopische Diagnose der bösartigen Geschwülste. 1897.
[36] Honsell: Ueber Gutartige metastasierende Strumen. Beitr. z. klin. Chir., 1899, Bd. 24.
[37] Pratt: Classification of Benign Thyroid Tumors. Boston Med. & Surg. Jour., July 3, 1903.
[38] Eiselsberg: Die Krankheiten der Schilddrüse. Stuttgart, 1901.

INTESTINAL PARASITES IN APPENDICITIS.[1]

BY J. C. HUBBARD, M.D., BOSTON,

Assistant in Surgery, Harvard Medical School; Third Assistant Visiting Surgeon, Boston City Hospital; Assistant Surgeon to Out-patients Free Hospital for Women.

Case I. C. V. C., entered the Boston City Hospital in the service of Dr. Bolles, who permits me to report the case, on Dec. 28, 1902. She was born in Boston and still lived there. She was nine years old. The family history and the previous history were both of no importance. The present illness began five days earlier with a chill, vomiting and abdominal pain, cramp-like in character, localized about the umbilicus. For the previous two days the pain had been less severe but has become localized in the right inguinal region. The physical examination in brief was as follows: Well developed and nourished. Pulse 124. Temperature normal. Apathetic. Facies slightly peritoneal. Heart and lungs normal. Abdomen symmetrical, slightly distended. An area of dullness near the right anterior spine and in the right flank. All the abdominal muscles in a state of spasm. Tenderness slight in the epigastrium and marked in the right lower quadrant but not general.

An immediate operation was decided on and under ether a muscle-splitting incision was made at McBurney's point. As soon as the peritoneal cavity was opened several ounces of creamy pus welled up. Pus wiped away and the pus cavity found not well walled off from the general abdominal cavity. The mesentery of the appendix, which was easily found, was tied off with chromicized gut. The appendix was tied off at its base and cut away. The stump was touched with carbolic acid. The peritoneal cavity was then washed out with many bottles of salt solution. The pus was found to come from the peritoneal cavity generally. Wicks were placed in various directions and the wound was partially closed. The appendix was red, swollen, gangrenous and perforated at one point. It contained two small worms identified by the pathologist as pin worms. The bacteriologist reported staphylococcus pyogenes aureus and bacillus subtilis in the pus.

At the close of the operation the patient was moribund, but rallied under stimulation and lived till the evening of the next day.

Case II. C. H. B., entered the Boston City Hospital March 5, 1903. He entered the service of Dr. Bolles, but came under my care. He was sixteen years old, a painter by occupation. The family and previous histories were unimportant except that he had never been troubled by indigestion. March 1 had an attack of abdominal pain and took some medicine to cause vomiting. The next day he went to the Boston Dispensary complaining of constipation, colicy pain and tenesmus. The examination was negative except for general tenderness over the abdomen. March 3 the condition was the same. Temperature 97 and pulse 120. March 4 about the house all the day till afternoon, when he went to bed feeling worse. Restless and delirious through the night. Abdominal pain more intense. March 5 seen by Dr. Colburn, to whom I am indebted for a large part of the history, and was sent to the hospital immediately. Pulse 130 and temperature 95. On his arrival at the hospital his condition was very critical. There was general cyanosis. The extremities were cold and the abdomen distended. There was general spasm of the abdominal muscles. He was suffering evidently from general peritonitis and although the boy was moribund it seemed best to give him even a forlorn chance, so under very light anesthesia incisions were made quickly through the abdominal wall in several places. As soon as the peritoneal cavity was opened a large amount of purulent material of the consistency of pea soup gushed out. Drainage tubes and gauze wicks were rapidly put in place and an intravenous injection of salt solution given. The patient lived several hours and then died in spite of stimulation. At a partial post-mortem examination a dead lumbricoid worm was found free in the general peritoneal cavity and another half way through a perforation in the appendix.

[1] Read before the Boston Obstetrical Society, Nov. 17, 1903.

While cases of appendicitis are occasionally reported where pin worms (oxyuris vermicularis) are found in the appendix, those with lumbricoid worms (ascaris lumbricoides) are less numerous. The interest in these cases centers about the etiological importance of the parasites, whether they have any direct influence on the inflammation of the appendix or whether their presence is simply a coincidence. They may have the same relationship to appendicitis as any foreign body. A foreign body lying in the appendix may cause appendicular colic due to the muscular contractions in the appendix in the attempts to expel it, or an actual inflammation may be brought about in the following manner: the foreign body irritates the mucous membrane which becoming swollen throws out an increased amount of secretion. As this cannot escape from the appendix, the lumen being blocked by the swelling of the mucous membrane about the foreign body, it distends the organ. The circulation is thus altered and an opportunity offered for the entrance into its walls of any bacteria, with a resulting inflammation. In such cases the inflammation is due to the presence in the appendix of something foreign to the normal contents, a fecal concretion, a worm, etc., and is in no way dependent on the characteristics of that particular form of foreign body. Does the inflammation of the appendix containing an intestinal parasite have any direct relation to that parasite because it is a worm and not a mass of hardened feces and because it has certain definite characteristics and manner of life? While the question is still open for some of the intestinal worms, for others it seems to have been fairly well settled both by the clinician and the pathologist.

Clinically the importance of intestinal worms has been shown by Metchnikoff,[1] who reports the histories of four cases of appendicitis. Most of the four had several recurring attacks of apparently typical appendicitis. Metchnikoff, finding in the stools of the patients either the eggs of intestinal worms or the worms themselves, gave to his cases vermifuge medicines. The cases all recovered, there were no more recurrences and when the series was reported the patients had been free from any suggestive symptoms for some length of time. He feels so strongly the importance of these worms as an etiological actor in appendicitis that he advises the examination of the stools in doubtful cases of appendicitis and as a routine practice in children, that the worms may be destroyed in time to prevent an attack.

The parasites most commonly found in cases of appendicitis and general peritonitis are trichocephalus dispar, ascaris lumbricoides and oxyuris vermicularis. While the first form of worm is not as common as the other two it was found in 23 soldiers out of 59 who were returned from the Philippines to the United States government hospital for the insane and examined for intestinal parasites.[2]

[1] Bull. Acad. d. Med., Paris, 1901, 3 s, xlv, 301.
[2] Med. Record, Aug. 8, 1903.

The proof of the definite relationship of cause and effect between trichocephalus dispar and appendicitis has been shown by the work of Askanazy.[3] He published in 1896 an article on the source of the food supply for this worm. Examining the worms microscopically, he found in them a substance which reacted to the test for iron and which originated he felt sure in the hemoglobin of the host. To get this food the worm must necessarily suck the blood of the host. He noticed that often at autopsy a worm was so firmly adherent to the mucous membrane that attempts to dislodge it resulted in either tearing the mucous membrane or breaking the worm. Hardened specimens showed that a greater of less part of the worm disappeared into the mucous membrane. Microscopic examination of sections showed that the worm had bored its way into the mucous membrane and had not simply entered a pre-existing opening. These wounds of the mucous membrane then may allow the entrance of bacteria. Girard[4] has demonstrated this very prettily. The case was that of a child of eight years who developed symptoms of peritonitis, the localizing signs being on the left side. The peritoneal cavity was opened, allowing the discharge of a sero-purulent fluid. The appendix appeared normal, but was removed as a precautionary measure. It was hardened and then cut into sections. By this two trichocephali were found. Girard describes the sections as follows: " The appendix is absolutely healthy in appearance. There is no trace of either old or recent inflammation anywhere except at the point where the extremity of the trichocephalus has penetrated into the mucosa. At this point there is a zone of inflammation. A large number of mono and polynuclear leucocytes are seen, some among them showing destruction of nuclei. In the midst of cellular detritus are bacteria, streptococci and colon bacilli. The inflammation around the tricocephalus is then due to the introduction of the intestinal microbes by means of the nematode." In this case an active inflammation was set up about the parasite due directly to it as a living worm leading its own individual life. It follows therefore that a trichocephalus may furnish the primary and direct cause for an attack of appendicitis.

The proof that ascaris lumbricoides ever causes an inflammation of the appendix as a result of its life struggle is less clear than in the case of trichocephalus. Ascaris is known to often force its way into narrow channels like the appendix and gall duct. When it clogs the lumen of the appendix it acts as I have already shown as a foreign body. I believe that it may do more than this, as it is not an inactive mass. It is very easy to conceive that by its struggles it may perforate a diseased appendix which if it contained a lifeless foreign body would have remained intact. This worm may thus change a comparatively simple case of appendicitis into a very complicated one. The question whether

[3] Deutsch. Arch. f. klin. Med., Bd. lvii, S. 104.
[4] Annals de l'Instit. Pasteur, 1901, xv, 440.

it can perforate a healthy intestine is still under discussion, though a case recently reported [5] seems to show that it may. Askanazy attempted to show the same relationship true between ascaris and appendicitis as between trichocephalus and appendicitis. He found in the intestinal epithelium of the ascaris a substance which reacted to the test for iron as did that in the trichocephalus. He felt, therefore, that this iron came from the blood of the host and that it was fair to assume that the ascaris obtained it by sucking. To suck the blood the mucous membrane must necessarily be wounded and entrance given to bacteria.

When we come to oxyuris vermicularis the proof of its etiological value as a cause of appendicitis other than through its presence as a foreign body is lacking. The pin worm is generally considered an inhabitant of the rectum and lower bowel. That this is not true is shown by the frequency of its occurrence in the appendix in a series of 200 autopsies done by Still [6] on children under twelve years of age. He found pin worms in the intestine in 38 cases, in 25 of which they were in the appendix. In 6 they were in the appendix and nowhere else in the large intestine or cecum. Sometimes they were in the extreme tip of the appendix, as in the case of a boy who died of pleurisy and pericarditis. Before death he complained of pain in the right iliac fossa. At the autopsy the appendix was found thickened and in a condition of catarrhal inflammation. In the distal 2½ inches 111 worms were found. No others were found anywhere in the intestine. Some have thought that oxyuris might wound the mucous membrane of the appendix by its wriggling and thus by furnishing a place of entrance to bacteria cause an attack of appendicitis. This theory as far as I know has not been substantiated by any definite proof and remains therefore simply as an attempt to carry the relation that exists between the other two parasites and appendicitis to oxyuris vermicularis.

Conclusions. — An intestinal parasite causes appendicitis through its presence as a foreign body; and by its struggles may bring about a perforation and peritonitis where otherwise none would have occurred.

Trichocephalus dispar has been proved to cause an inflammation of the appendix by injuring the mucous membrane while sucking the blood of the host.

Ascaris lumbricoides has been found with a material similar to that in trichocephalus in its intestinal epithelium and therefore is supposed to attach itself to the mucosa of the host and thus start the processes which result in appendicitis.

Oxyuris vermicularis. No proof has been found that this worm causes an appendicitis except in its rôle of foreign body.

[5] Agar; J. Am. Med. Assoc. Feb. 28, 1903.
[6] Brit. Med. J. 1899, Vol. i, 898.

Clinical Department.

A CASE OF SARCOMA OF THE LOWER JAW.[1]

BY F. B. LUND, M.D., BOSTON.

THE accompanying case is reported in order to illustrate the slight amount of deformity which results from subperiosteal excision of the body of the lower jaw, from the lateral incisor tooth to the angle. The patient, a young girl of thirteen, was operated upon on the 16th of July, 1903, for a sarcoma of the lower jaw, which began in the medulla, had caused a fusiform swelling of the lower jaw, had forced its way upward through the alveolar process and grown up into the mouth

[1] Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital.



Case of Sarcoma of the Lower Jaw.



Case of Sarcoma of the Lower Jaw.

as a papillary growth which had been considered an epulis. The anterior molars and rear bicuspids had been pushed inward and loosened by the growth. The patient was etherized, and the portion of the tumor projecting into the mouth removed with scissors, and examined by the microscope, proving to be a giant-celled sarcoma. An external incision was then made along the body and angle of the jaw, the facial artery divided, the periosteum peeled from the entire body of the jaw and the jaw divided by a saw and cutting forceps just anterior to the socket of the canine tooth in front and at a point on the ramus of the jaw level with the alveolar process behind; the submaxillary gland was removed; the lingual and hypoglossal nerves were exposed during the operation and the latter, having been partially divided, was sutured with fine silk; all suspicious bits of tissue were cut away, divided muscles and deep tissues sewn with catgut, and the skin incisions with a subcutaneous horsehair suture; the mucous membrane was sewn inside the mouth with catgut. The patient made an excellent recovery from the operation, but the wound suppurated, undoubtedly owing to the infection from the mouth, and had to be drained. It finally healed well, however, and the periosteum has evidently replaced the lost bone to a very considerable extent, as a firm, bony bar can be felt in the place of the bone which was removed. The photograph shows that the deformity on front view is very slight; the scar on lateral view is rather deep and conspicuous, but will fade out considerably in time, after which the deformity on side will be much less marked.

CHRONIC CYANOSIS FROM ACETANILID POISONING.

BY J. N. HALL, M.D., AND H. R. MCGRAW, M.D., DENVER, COL.

IN view of the cases of "Chronic Cyanotic Polycythemia" reported by Hall in *American Medicine*, June 27, and of Chronic Cyanosis with Polycythemia and Enlarged Spleen," by Osler, in the August number of the *American Journal of the Medical Sciences*, these cases of cyanosis of drug origin are of especial interest. Dr. Osler has informed me that he has recently seen such a case from the use of bromo-seltzer, well known to contain acetanilid, which was mistaken for the newly described disease.

The patient was a professional man from a western state, fifty years of age. He stated that he had had bleeding piles for thirty years, during which time three ischio-rectal abscesses had been opened. He had been generally constipated. Although decidedly sallow at times he has had no real jaundice. He stated that his present trouble dated from the use of large doses of acetanilid for headache, begun six months or more ago. It is probably safe to estimate that he had taken 30 to 40 gr. daily for this period. There was no history of alcoholism. His weight had fallen from 160 to 140 pounds. He felt weak, and suffered from dyspnea, and from palpitation on exertion. Digestion was poor, with occasional vomiting of mucus. His face was slaty in color, and much darker than the cyanosis of advanced emphysema. The mucous membranes were similarly discolored, and the skin of the body to a lesser extent. There was no increased pigmentation over the joints and bony prominences, as in Addison's disease. The color lessened upon pressure, but immediately returned. The temperature rose to about 102° daily. The physical examination was negative so far as the chest and abdomen were concerned. Pulse moderately increased in frequency, and of fair quality. The pupils were somewhat contracted. Several bleeding hemorrhoids and a blind rectal fistula were found by Dr. Sherman T. Brown.

The blood was very dark, with 3,038,000 reds and 18,000 whites. Moderate poikilocytosis existed. The increase in the whites was in the polymorphonuclear leucocytes, doubtless explained by the rectal trouble. The reds were pale, and had a "brittle" appearance. The test with Fleischl's hemoglobinometer gave 30% of coloring matter, though this was chiefly methemoglobin, probably. No spectroscopic examination was made.

The urine had a specific gravity of 1,022, no sugar nor albumen. Its color was dark, and the patient stated

that it was always darker when he used much acetanilid than at other times, evidently from excess of coloring matter from the destruction of blood cells. Its odor was strong. No pathological sediment was found excepting a few bacteria at a single examination.

Iron, arsenic and strychnine were ordered, with nutritious diet and rest. The acetanilid was stopped. The operation upon the hemorrhoids, which the patient desired immediately, was forbidden until the blood condition became more favorable.

The improvement was continuous and rapid, doubtless helped as much by the cessation of use of the drug as by the other treatment. The fever subsided within two weeks. We believe it to have been due chiefly to the rectal condition, although doubtless the damage to the heat-regulating mechanism by the antipyretic played a part in the production of the fever. On the fourteenth day the hemoglobinometer registered 70, on the twenty-seventh day increasing to 93. The red cells numbered 5,600,000, and were of normal appearance. On the next day Dr. Leonard Freeman operated upon the hemorrhoids and the fistula. The patient went home entirely well a fortnight later, and has remained well since.

Reports of Societies.

CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA.

EIGHTEENTH ANNUAL MEETING, HELD AT BALTIMORE, MD., OCT. 23 AND 24, 1903.

FIRST DAY, MORNING SESSION.

THE Conference met in the hall of the Medical and Chirurgical Faculty of Maryland, and was called to order by the first vice-president, DR. JOHN GUITERAS, Havana, Cuba, in the absence of the president.

An address of welcome on behalf of the Faculty of the University of Maryland was delivered by DR. JOHN F. CORDELL, who in referring to the early medical history of Maryland stated that the Medical and Chirurgical Faculty, organized in 1802, was the first to give its formal endorsement of vaccination. As a matter of equal importance, he mentioned that papers were written in 1807 by John Crawford advocating and favoring the animalcular theory of disease. These papers were published in a non-medical journal, for the reason that no editor of a medical journal at that time would accept them. Crawford was erratic, but considered far ahead of his time. He was the first in any English-speaking country, so far as the speaker knew, to advocate the germ theory of disease. Crawford antedated Lister at least fifty years, as a perusal of Crawford's writings would show.

DR. WM. H. WELCH of Baltimore followed with an address of welcome on behalf of the State Board of Health of Maryland. He said, among other things, there was another name which should be mentioned in connection with the medical history of Maryland — John K. Mitchell, father of Weir Mitchell, whose book on the "Cryptogamic Origin of Malarial Fever" was really a classic. He thought Mitchell's name should be coupled with that of Henle, who forecasted the doctrine of contagium vivum.

The first vice-president responded briefly to these addresses of welcome.

THE ETIOLOGY AND PREVENTION OF INFANTILE DIARRHEA.

DR. JOHN H. MASON KNOX of Baltimore read a paper on this subject. He said no single organism was considered to be the cause of infantile diarrhea until the experimental work of Duval and Basset. Following Shiga's work in 1898 the organism was found to have wide distribution. From year to year the organism had been found to be more general.

Reference was made to the investigations of Flexner in the Philippines in relation to dysentery among soldiers and the Shiga bacillus as a cause of it. Subsequent investigations made by bacteriologists in Germany, China, Constantinople, etc., disclosed the existence and prevalence of this bacillus in epidemic dysentery, so that its pathogenicity was now well established.

At the suggestion of Flexner, the speaker and others undertook a series of investigations at the Wilson Sanitarium, and of 53 cases carefully examined, the Shiga organism was found in 42 in greater or less numbers. Careful clinical examination, however, showed definitely that no one type of the disease could be associated with this organism; that all types of intestinal diseases, common among children in summer, were caused by the same organism. Laboratory investigation had shown two or three types of organism very closely related. Thus far the great majority of cases in babies had been the acid Harris type. At the Wilson Sanitarium the speaker and his colleagues had a series of upwards of 40 cases of infantile diarrhea which were found to have been produced by the same organism, and conference with those who had charge of the cases clinically led him to believe that the conclusions of the clinicians were the same as theirs. It was found that not only during the summer, but in the winter, sporadic cases of infantile diarrhea were associated with this organism. Wolfstein had reported 37 sporadic cases of infantile diarrhea as having occurred in winter, and Basset four cases as having been seen in the Johns Hopkins Dispensary, due to this organism.

Shiga, by the serum treatment, had reduced the former mortality of this affection from 20 to 30% to 10 and even 7%. Of 25 cases treated by injections of serum at the Wilson Sanitarium, some betterment was noticed after the injection in the cases that were seen early, but the improvement was not brilliant or startling. In eight cases the serum had a beneficial action. In connection with the serum there were changes made in diet, and medication was used, so that the results obtained were confusing in their interpretation. In cases of long standing, associated with an inflammatory condition of the intestinal tract, in which there was probably ulceration, blood in the stools, etc., the serum was of no avail. Although the serum treatment was not very beneficial, it was harmless, as no dele-

terious effect was observed in any of the cases. He emphasized the importance of supplying the children of our large cities with pure milk and uncontaminated water.

ARE THE LABORATORY METHODS OF DIAGNOSIS IN INFANTILE DIARRHEA APPLICABLE IN PUBLIC HEALTH WORK?

MR. EDWIN G. SCHORER of Baltimore in a paper on this subject, in referring to methods of diagnosis, said that with the establishment of the etiology of infantile diarrhea, a great step in advance had been made, yet under the present conditions they were not available for or applicable to public health work. This last statement might, however, be limited, inasmuch as a bacteriological diagnosis would undoubtedly be of value in the limited number of persistent cases of diarrhea, and in those in which the antidysenteric serum was to be given. For this purpose the mailing case of Dr. Parks was to be recommended. The fact that, at the present time, the methods were not available for general diagnostic purposes, ought not to discourage any one from complying with any request boards of health might make. Much was still to be learned in regard to the dysentery organism and infantile diarrhea, a good share of which could be furnished by statistics obtained and facts learned from local boards of health.

DR. WILLIAM H. WELCH of Baltimore referred to a point of historical interest; namely, that these scientific investigations in regard to the causal relation of the Shiga bacillus to infantile diarrhea received its initiative and support from the Rockefeller Institute of Medical Research. If one did not see for a moment how the discovery was to be utilized practically, it did not lessen the scientific interest in this great addition to our knowledge.

It was a surprise to him that Dr. Knox had found the organism, which had been proven to be the cause of a prevalent group of cases of dysentery, to be the cause of summer diarrheas of children. One did not think of the ordinary summer diarrhea of children as belonging to the same group of cases as adult dysentery. The organism, Dr. Welch said, must be found in other localities than Maryland in order to demonstrate that it had any causal relation to summer diarrhea of children. Some bacteriologists had found the Shiga bacillus in 90%, others in 60 to 70% of the cases of infantile diarrhea. These various percentages in finding the bacillus might be due to variations in skill or a more careful selection of cases on the part of the observers.

The serum treatment of this disease, according to Flexner, was disappointing. The best results had been obtained in the treatment of adult dysenteries. Instances had been reported by Holt, Thayer and others in private practice where the serum seemed to have had a marvelous effect. The evidence showed, however, that conditions in hospital and dispensary practice were unfavorable for obtaining satisfactory results with serum.

DR. HENRY M. BRACKEN, Minneapolis, Minn., referred to the milk question, saying in the larger cities it was difficult to get a pure milk supply. What was generally known as certified milk was one of the best articles of artificial diet for children. At present much attention was being paid in some cities to securing a pure milk supply by excluding tuberculous cows from dairies. Even this would not insure a pure milk supply by any means. The testing of dairy herds for tuberculosis might be satisfactory to the dairymen and seemingly protect the people, but there were more infants that died every year from impure milk than from tuberculous milk. More attention should be given to the sanitary aspects of the dairy than to the diseased animal. Certified milk and pasteurized milk were as satisfactory articles of diet as could be obtained at the present time.

DR. JOHN N. HURTY, Indianapolis, Ind., cited an instance showing that typhoid fever and dysentery (epidemic) could be conveyed by flies as well as by polluted water.

DR. CHARLES O. PROBST, Columbus, Ohio, considered it very important to disinfect the stools in cases of infantile diarrhea, although Dr. Knox had not referred to it.

He understood Dr. Knox to say that the Shiga bacillus inhabited the healthy intestinal canal, and that under certain conditions of environment it might take on pathogenic properties. He asked whether this was so or not.

DR. GARDNER T. SWARTS, Providence, R. I., understood that the Shiga organism was easily killed in the presence of other bacteria, as the colon bacillus, which was a common inhabitant of the intestinal canal. If the Shiga organism was so easily killed in the presence of other bacteria, why did it prevail so extensively?

DR. S. R. TOWN, Omaha, Neb., concurred in the remarks of Dr. Hurty relative to intestinal disorders being contracted and disseminated by polluted water supplies. He cited an epidemic of diarrhea which occurred in Chicago in the winter, years ago, which was caused apparently by the discharge of a large quantity of surface material into Lake Michigan, producing a large death-rate. The Chicago Board of Health prevented the development of a large number of cases of diarrhea, and typhoid fever secondarily, by shutting off the taps at the public schools, and exclaiming "Boil the water!"

DR. JOHN N. HURTY cited a similar epidemic which occurred in Michigan City, Ind. There were no less than 3,000 cases of diarrhea from polluted water.

DR. HENRY D. HOLTON, Brattleboro, Vermont, thought that infantile diarrheas were considered gastro-intestinal diseases, and that dysentery simply applied to bloody flux, which was not common in infants, but was sometimes seen. He quoted an old practitioner as saying that typhoid fever was the result of drinking low ground water.

MR. FRANK WELLS, Lansing, Mich., said the Michigan State Board of Health had published

a leaflet on the subject of infantile diarrhea as the result of a report made by Prof. Victor C. Vaughan. This leaflet, which had been given wide circulation, advised that all cow's milk given to infants shall be pasteurized. The leaflet was furnished to all of the teachers of public schools in Michigan. It was the duty of boards of health, he thought, to furnish such information to the people.

Dr. Henry Mitchell, Asbury Park, N. J., urged repeated inspections of cases of diarrhea in children and adults, as in cases of typhoid fever. The New Jersey legislature had given the State Board of Health authority to make such inspections. A law had also been enacted that no milk should be sold from premises on which there was an impure water supply. He pointed out how this law could be so interpreted as not to be effectual in its administration.

Dr. Knox, in closing the discussion, emphasized the importance of good milk and pure water for children as well as adults. Common house flies were carriers of disease; they were a source of contamination in many instances. Proofs of this were abundant.

Replying to Dr. Probst, he said the disinfection of stools in cases of infantile diarrhea was as essential as in typhoid fever.

In speaking of dysentery, it was not to be confounded with bloody flux, as intimated by Dr. Holton. He used the term "dysentery" to include those cases in which the Shiga bacillus was found to be present.

He could not answer satisfactorily the question of Dr. Probst relative to the Shiga organism inhabiting the healthy intestinal canal, but hoped Professor Welch would do so.

Dr. Welch said the Shiga organism was not present in normal stools. If it were, it was in such small numbers that it required the most painstaking investigation to find it.

Mr. Schorer cited an instance explaining why the colon bacillus killed the Shiga organism. The organism of dysentery was found in the mucous coat of the intestine, while the colon bacillus might be found in any part of the fecal matter.

(*To be continued.*)

AMERICAN NEUROLOGICAL ASSOCIATION.]

Twenty-Ninth Annual Meeting, Held at Washington, D. C., May 12, 13 and 14, 1903.

(Concluded from No. 22, p. 602.)

Third Day — Thursday, May 14.

THE NEURASTHENIC NEURALGIAS.

This was the title of a paper by Dr. Frank K. Hallock of Cromwell and was based on a study of forty-five cases, with the following conclusions:

Clinically two varieties exist: one is non-objective, the pain existing with very slight or no concomitant physical symptoms; the other is objective, the pain being accompanied by localized symptoms, sensory, motor, vasomotor, secretory, trophic. The non-objective neuralgias may be subdivided into a paresthesic type (distinct from the paresthesic of hysteria, etc.), a spontaneous form with or without an appreciable cause, and a habit form due to an antecedent neuritis. The term "neurasthenic" should, perhaps, be limited to the neuralgias which are non-objective, that is without marked concomitant physical signs. It is often very difficult to distinguish between a neuritis of the sensory nerves and a neuralgia with pronounced local symptoms. The motor disturbance, direct or indirect, is generally more marked in genuine neuritis. Another diagnostic point is the fact that decided variations in the general physical state, as well as psychical influences, produce fluctuations in the pain relatively greater in neuralgia than in neuritis. The pathology of neurasthenic neuralgia is necessarily obscure. The extent to which excitability of the sensory nerves is of central or peripheral origin is hard to determine. Cases with marked local symptoms can best be explained by the supposition of a mild grade of peri-neuritis rather than a neuritis, interstitial or parenchymatous. The pathology of the non-objective neuralgias, if it is to be interpreted *peripherally* and not centrally, is most likely of the nature of chemical stimuli due to localized nutritional and metabolic defects. The neuralgia being considered merely a symptom, the prognosis depends chiefly upon the general physical rallying power plus the type of individual. The treatment consists largely in the regulation of the patient's life, and attending to the underlying neurasthenic state. In the management of the local condition the first requisite is rest, partial or complete, according to the severity of the attack. Later, localized applications of massage, hydrotherapy, electricity, dry hot air, etc., are of varying utility in different cases. Inasmuch as the neuralgia is apt to be obstinate and of prolonged duration it is advisable to teach the patient how to bear pain in the most philosophic manner. Hypnotic suggestion is of great value in certain cases.

Dr. Baker had been accustomed to look upon these cases, especially the non-objective variety of neurasthenic, as being best explained in a general way by nerve starvation and by adding to that the newer concept of nerve poison.

Dr. Langdon considered the differential diagnosis in cases of neurasthenic neuralgia as of very great importance. In his experience, any sensation that can be called a true neuralgia is a comparatively rare symptom in neurasthenia. Pain, and even tenderness of the nerve trunks, often occur in neurasthenia, but such cases belonged to the paresthesias, and some other cause than neurasthenia should be looked for.

Dr. Leonard Weber of New York believed it necessary in every case of chronic neuralgia to investigate as to previous syphilitic infection. In his opinion, no disease was more likely to be associated with neurasthenia in the course of

years than old syphilis, in which neurasthenic neuralgias might occur. As a rule, surgical intervention is not followed by good results.

DR. ANGELL thought it very easy for nervous patients to exaggerate unintentionally the significance of symptoms, especially regarding pain. He agreed with Dr. Langdon that many pain cases are cases of paresthesia.

MODERN THEORIES OF THE EMOTIONS AND THEIR BEARING ON MENTAL DERANGEMENTS.

This was the title of a paper by DR. HENRY UPSON of Cleveland. He concluded that in different forms of sensation the emotional element varies. The special senses and tactile sensibility set up intellectual mental conditions. The pain sense and visceral sensibility have a slight localizing value and an emotional content that varies from moderate pleasure or discomfort to the more marked and definite emotional states; either of these elements may be present without the other, especially in the case of visceral sensibility, which often fills the emotional field of consciousness without percepts of localizing value. The modern view of the emotions as perceptions of altered visceral conditions, at some times due to psychic causes, at others dependent on physical disease of the viscera, functional or organic, is derived in part from medical observations and in turn illumines the field of psychiatry. The viscera constitute the instrument played upon by psychic stimuli, and the brain centers are receiving stations for resulting sensations, present in consciousness as emotions. Certain relations between disease and resulting emotions were briefly considered.

DR. H. T. PERSHING of Denver had recently given attention to this subject with special reference to the treatment of emotional disturbances in neurasthenia and hysteria. It was obvious that the first thing to do is to remove the idea exciting an undesirable emotion. In many cases he found great advantage in teaching the patient to voluntarily suppress the motor reaction peculiar to the depressed emotion, and to voluntarily imitate the reaction of the opposite emotion. He thought many emotional disturbances were due to physical causes.

DR. KNAPP said that in patients who have exhausted themselves in struggling against an insistent idea, it was better to suggest to them to let the whole thing go, and to endeavor to divert the patient's attention, and let the idea come on unrestrained.

DR. BAKER thought it should be a matter of routine to inquire whether the patient has been subjected to shock within recent months, or whether he is under prolonged intense emotional excitement of any kind. The result of the latter condition is direct interference with nutrition.

DR. EDWARD B. ANGELL of Rochester said it was much wiser to get at the obstruction indirectly rather than directly, as it was impossible to argue with a person's morbid notion without emphasizing it.

PARALYSIS AGITANS COMPLICATED WITH DELUSIONAL MANIA.

This was the report of a case by DR. JOHN PUNTON of Kansas City. A man sixty-one years of age, with good family history, was well until four years ago, when he suffered from an attack of grippe from which he recovered a few weeks later. About two years ago he gradually became very nervous, and there was marked muscular rigidity and a fine tremor. He also assumed the attitude and gait common to paralysis agitans, together with the characteristic fancies. These symptoms, together with vasomotor disturbances, continued to develop and grow worse in spite of treatment, which caused him to become quite despondent, and later he presented all the symptoms of true melancholia. Subsequently there was acute mania with mental exaltation, delusions and hallucinations. In April, 1901, he was admitted to the hospital with the typical picture of paralysis agitans complicated with delusional mania. At the end of eighteen weeks he recovered his mental health, but the paralysis agitans had not improved.

GENERAL PARALYSIS WITH FOCAL SYMPTOMS AND ATROPHY.

This was the report of a case by DR. ADOLF MEYER of New York. In a man forty-two years of age, difficulty in the use of the left arm developed slowly, together with inefficiency in work, which finally passed into slight expansiveness, characteristic for general paralysis. Under observation, the difficulty was found to be an anesthesia of the left arm of central origin, leading to deficient use when the eyes were closed, occasional slow twitchings of the left arm and the gradual development of rigidity and spreading of the sensory and motor symptoms over the whole left side; also production of left hemianopsia and increasing dementia. The diagnosis of atypical general paralysis was corroborated by the autopsy, which showed atrophy of especially the posterior part of the right hemisphere without focal lesion, but marked narrowing of the cortex and distention of the ventricles, and contralateral gliosis of the whole left part of the cerebellum, with partial degeneration of the cortex; the histological process was typically that of general paralysis, which was much less marked in the left hemisphere. There was a probability of syphilitic infection nineteen years before the onset. Technically the case showed the decided advantages of injection of the brain with 10% formalin before removal at the autopsy.

GENERAL PARALYSIS WITH FOCAL SYMPTOMS.

DR. A. HOCH of Waverly reported two cases. CASE I. In the course of a year at first repeated convulsive seizures; later, attacks of twitching on the right side; then sudden aphasia with palsy of the right side. Under observation euphoria and general dullness; motor aphasia, paresis and ataxia of right arm, with frequent

twitching. Later, involvement of whole right side. Death in convulsions. Autopsy: — Lesions of general paralysis with much greater involvement of left side; the left hemisphere weighed 112 gm. less than the right.

Case 2. Complained of headache, stupid feeling and inability to express himself; at times irritable. A year later, apoplectiform attack. Following this, persistent paraphasia with difficulty to understand written and spoken language. Appreciation of defect. Hemianopsia. Argyll-Robertson pupil on the right side. General euphoria and irritability. Death in convulsions. Autopsy revealed the usual lesions of general paralysis with more pronounced changes in the left hemisphere, which weighed 120 gm. less than the right.

The last two papers were discussed together.

Dr. Bullard asked Dr. Meyer whether he had found astereognosis or not. He said it was unusual to find cerebellar trouble in such cases in which the hemisphere of the opposite side is affected. In the reports of autopsies of feebleminded, this seems to be the ordinary occurrence (in which one hemisphere is more especially affected), to have the opposite cerebellar hemisphere likewise affected.

Dr. Meyer replied that he did not speak of astereognosis on account of the presence of anesthesia. He was inclined to utilize the case in corroboration of his view that the anterior central convolution is the essential motor region, plus, of course, some immediate sensory activity, but that the parts behind the Rolandic fissure are essentially reception stations also of influence in the work.

DOUBLE OPTIC NEURITIS WITHOUT ASSIGNABLE CAUSE.

Dr. Howell Pershing of Denver reported a case of this character in which the course was acute, and when the neuritis began to subside, it subsided rapidly in one eye while it advanced in the other. The patient was otherwise in perfect mental and physical health.

Dr. Patrick had seen a case of typical choked disk due to simple chlorosis, the patient making a complete recovery under treatment for the chlorosis.

Dr. H. K. Mitchell of Philadelphia mentioned the case of a girl seventeen years of age who made a perfect recovery from a pronounced double optic neuritis with apparent meningeal symptoms.

Dr. Bullard expressed the opinion that in many of these cases there might be a certain amount of hydrocephalus.

DEVELOPMENT OF THE NEURO-FIBRILS IN THE NERVE CELL.

Dr. Stewart Paton of Baltimore exhibited microscopical specimens illustrating the development of the neuro-fibrils in the nerve cells. He explained that they make their appearance in the nerve cell of the embryo, first in the apical processes, and about the time of birth can be stained in the cell bodies in the larger cells of the cerebral cortex. They develop later than do the Nissl bodies. He also demonstrated their degeneration in pathological processes.

Dr. E. W. Taylor said that the work of Dr. Paton was new in this country. He thought it a matter of very great importance as to whether we can attribute any definite significance to the alteration found in the neuro-fibrils.

ELECTION OF OFFICERS.

The following-named gentlemen were elected for the ensuing year: President, Dr. Frank R. Fry of St. Louis; Vice-Presidents, Dr. Hugh T. Patrick of Chicago and Dr. William G. Spiller of Philadelphia; Council, Dr. Charles L. Dana of New York and Dr. J. J. Putnam of Boston; Secretary and Treasurer, Dr. G. M. Hammond of New York.

Recent Literature.

The Latin Grammar of Pharmacy and Medicine. By D. H. Robinson, Ph.D., with an Introduction by L. E. Sayre, Ph.M. Fourth edition, with elaborate Vocabularies, thoroughly revised by Hannah Oliver, A.M. Philadelphia: P. Blakiston's Son & Co. 1903.

This small book is intended for the use of students in pharmacy and medicine, who have not received a sufficiently classical education to be familiar with the necessary Latin terminology. As such it has proved useful in the hands of the writers, who are also teachers. We confess to a hope that ultimately English terms may be so widely used that such an aid will not be necessary. In the meantime we can commend this Latin Grammar to elementary students.

Modern Microscopy. A Handbook for Beginners and Students, combining: I. The Microscope and Instructions for its Use, by M. I. Cross. II. Microscopic Objects: How Prepared and Mounted, by Martin J. Cole. Third edition, entirely revised and enlarged, to which is added III. Microtomes; Their Choice and Use. pp. xvi, 292. Illustrated. Chicago: W. T. Keener & Co. 1903.

This small handbook discusses matters relating to microscopy, which we are inclined to think even experienced users of the microscope do not know. Particularly does this remark apply to the chapter on optical construction. Information is also given regarding the fixing and staining of sections, and a certain number of methods are detailed. A chapter is added on the subject of microtomes, which should prove useful to those concerned in fitting out laboratories. We note in passing that a 2% to 4% solution of formaldehyde is recommended as a fixative, but not infrequently a 5% to 10% solution of the commercial "formal" is preferable. The book is well printed and amply illustrated.

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SCIENTIFIC STUDY OF OLD AGE.

IT has been suggested that if infancy and its diseases is worthy of special and detailed study, old age should likewise receive far more attention at the hands of scientific men than it has hitherto been accorded. Whether with our increasing differentiation we shall come to have professorships on senility is open to question, but we have long been convinced that, in general, the subject has been neglected and that the interest of medical men is far less active concerning the disorders which afflict the aged than in those prevalent in the young and middle-aged. The reasons for this are apparent. The worth of the individual to the community grows less in the declining years of life; younger men assume the responsibilities, and the inevitableness of the final outcome, born of experience, is so deeply rooted in the human mind, that the afflictions of age are looked upon as, in a measure, physiological and therefore unavoidable. A worthy book on the diseases of the aged remains to be written.

There have, however, never been lacking certain men who have refused to accept the popular verdict of the physiological length of life, and urged the possibility of its continuance long beyond the usually allotted time. The elixer of life will, no doubt, continue to be sought, not only by the visionaries, but also by the sober-minded man of science. With Brown-Séquard's attempts to restore the vigor of youth still in mind, we find a new champion of the cause in the person of Elie Metchnikoff, widely known for his original and somewhat radical work on leucocytes, and now professor at the Pasteur Institute in Paris. He has found opportunity to write a book,[1] somewhat popular in character, on "The Nature of Man," in which he discusses in much detail the disharmonies of human life, the ever-present fear of death and a possible way out of the difficulties of our existence through a scientific study of old age, in which the leucocyte plays a conspicuous part. The book is a wholly serious attempt at a solution of the mysteries of life and death, in which science is set up as the high priestess of our faith. Where philosophical and religious systems have failed to bring peace, Metchnikoff thinks science may step in, and by dispelling the fear of death, adjusting disharmonies and postponing death for fifty or more years may bring the solution which he believes has hitherto been sought in vain.

When the scientific man wanders from his chosen field and discusses final problems, his speculations, though usually not weighty, are entertaining and often suggestive. This is certainly true of the book before us; we doubt if the arguments will disturb the peace of mind of the philosopher, or exalt the standing of science, but they are highly original and suggestive of the path which future study may take.

About half the book is taken up with a discussion of our origin from lower forms, and the resulting disharmonies in our organization as exemplified in the digestive system, the reproductive apparatus and in the instinct of self-preservation. In general, he finds from this analysis that these disharmonies with our surroundings are the source of all our troubles. The attempts made by religious and philosophical systems to diminish these ills are discussed in two chapters, with the conclusion that they have both miserably failed. Our final recourse must, therefore, be to science, and from science Metchnikoff apparently gains a fleeting satisfaction, although he admits that the world at large remains to be educated in the lessons it has to teach. Old age demands scientific study, if we are to arrive at conclusions of value, and in a most entertaining fashion Metchnikoff gives the results of his researches and speculations on the significance and causes of growing old, and of possible means of prevention of conditions ordinarily regarded as inevitable. Put into scientific language, he finds that: "In senile atrophy the same condition is always present, the atrophy of the higher and specific cells of a tissue and their replacement by connective tissue." For this the phagocytes are ultimately responsible. "I am," he says, "justified in asserting that senile decay is mainly due to the destruction of the higher elements of the organism by macro-

[1] "The Nature of Man. Studies in Optimistic Philosophy." English translation. G. P. Putnam's Sons.

phags" [large phagocytes]. Whitening of the hair is an example of the phagocytic activity of leucocytes, which take up the pigment. From this and similar arguments it is maintained that the leucocyte is largely responsible for the signs of age, the high types of cells finally yielding to the inroads of the leucocytes as the resistance of the organism is gradually weakened. The following sentence, which we quote, shows the degree of respect which Metchnikoff maintains toward the leucocyte: "The phagocytes are endowed with a sensitiveness of their own, and by means of a sense of smell or taste are able to recognize the nature of their surroundings. According to the impression made upon this sense, they approach the object which arouses it, exhibit indifference to it or withdraw from its vicinity." It behooves us therefore, in our fight against old age, "to strengthen the higher elements and to weaken the aggressive capacities of the phagocytes." May this not be accomplished by a serum obtained from macerations of human organs, injected in the usual way? Metchnikoff thinks this not impossible, though manifest difficulties lie in the way of obtaining satisfactory organs for experimental purposes. Finally, when life has been prolonged far beyond the hundred-year mark, it is hoped that an instinct for death may replace the instinct for life, and so the cycle of man's life be made complete, ending in a normal old age and a positive desire for death. It is the function of science to bring this consummation, repudiating personal immortality, and regarding man as "a kind of miscarriage of an ape, endowed with profound intelligence and capable of great progress."

This, in general, is Metchnikoff's solution of the puzzle. It has the merit of originality, of a somewhat uncertain scientific basis and of being the product of the serious thought of a man eminent in science. It will not appeal to the philosopher; it will strike no sympathetic chord in the mind of the theologian; it will not, we suspect, be forthwith accepted by his brother scientists, but the book, nevertheless, will be read widely; it will excite discussion and may do something toward stimulating investigation into the pathology of old age.

REGENERATION OF THE SPINAL CORD.

IN our issue of June 26, 1902, we took occasion to discuss the validity of the evidence in a case reported by Drs. Stewart and Harte of Philadelphia of suture of the spinal cord. Another case somewhat similar in character has recently been reported by Dr. C. Harvey Rodi of Calumet Mich., to which allusion is made in the *Journal of the American Medical Association* for Nov. 21. We have not the original article at hand, but from the brief account given by our contemporary it appears that, following an injury, the cord was said to be entirely severed, save for a filament about the size of a pin connecting the two parts, which were separated about an inch. An operation of some sort was done, and, according to the statement, the following day sensation began to return in the lower extremities. Thereafter rapid improvement took place, and at the end of a year the patient was able to get about on crutches.

Commenting on this case, our contemporary remarks that "the little band of spinal tissue seemed to have acted like the catgut connection which has sometimes been made in widely divided nerve suture." It also argued that there must have been considerable restoration of structure to account for the restoration of function. As we before said, evidence that the spinal cord is capable of such regeneration as the foregoing maintains must be absolutely convincing before it can be accepted, in the light of our knowledge of the regeneration of the central nerve tissue. The statements made by our contemporary on the basis of the article to which we have alluded seem quite incomprehensible. The possibility of incorrect observation must be absolutely excluded before we can be justified in claiming such an extraordinary regeneration of nerve tissue as this case evidently implies. Naturally such observations are of the very greatest importance surgically if they can be completely substantiated.

A MULTIPLICITY OF CONGRESSES AND EXHIBITS ON TUBERCULOSIS.

WE beg to call the attention of our readers to a letter on another page of this issue from Dr. S. A. Knopf regarding the multiple congresses and exhibits, national, international and local, concerning tuberculosis, which are projected for the years 1904 and 1905. One "international" congress is announced to meet in St. Louis in October, 1904; another "international" congress is called to meet in Washington in April, 1905; there will be a postponed meeting of the previously established triennial Congrès International de la Tuberculose at Paris, Sept. 26-Oct. 1, 1905.

Independently of these "congresses," it is

proposed to hold two "Tuberculosis Exhibitions," one in Baltimore in January, 1904, and one in St. Louis during the Louisiana Purchase Exhibition.

The mere statement of such a situation suggests directly the desirability of its correction. Dr. Knopf offers a proposition for a basis of action.

MEDICAL NOTES.

EPIDEMIC OF TYPHOID AT BUTLER, PA. — Typhoid fever, to a most exceptional extent, is prevalent in Butler, Pa. Upwards of a thousand cases have occurred, with a considerable number of deaths, and new cases are continuing to appear. The source of the epidemic has apparently been shown to be the water supply used in the town, which has been polluted by previous cases of typhoid fever in the vicinity. Nurses and financial aid are being provided for the town, which has been practically demoralized by the extent of the epidemic.

SLEEPING SICKNESS. — Progress is apparently being made in the etiology of the so-called sleeping sickness of South Africa. Recent experiments in Uganda, conducted by Lieutenant-Colonel Bruce, in conjunction with Dr. Nabarro and Captain Grieg, apparently establish the fact that a parasite belonging to the sporozoa is constantly found in the cerebrospinal fluid of patients suffering from the disease, and that monkeys inoculated with this cerebrospinal fluid, or with blood containing a similar parasite, present all the symptoms of the disease. Secondly, it has been shown that the disease is endemic in regions where the tsetse fly is prevalent. Present indications, therefore, point to the fact that the disease is due to trypanosomes introduced through the agency of the tsetse fly.

MEMORIAL HOSPITAL, RICHMOND, VA. — A pamphlet descriptive of this hospital, opened last August, indicates that Richmond has therein a remarkably well-arranged and thoroughly equipped institution. The medical and surgical staff is elected from the faculty of the Medical College of Virginia.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Dec. 2, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 53, scarlatina 39, typhoid fever 19, measles 143, smallpox 0.

BOSTON MORTALITY REPORT. — The number of deaths reported to the Board of Health for the week ending Nov. 28 was 188, as against 210 the corresponding week last year, showing a decrease of 22 deaths, and making the death-rate for the week 16.25. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 52 cases, 3 deaths; scarlatina, 13 cases, 1 death; typhoid fever, 13 cases, 4 deaths; measles, 124 cases, 1 death; tuberculosis, 22 cases, 30 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 32; whooping cough, 1; heart disease, 32; bronchitis, 5; marasmus, 5. There were 6 deaths from violent causes. The number of children who died under one year was 32; under five years, 51; persons over sixty years, 40; deaths in public institutions, 51.

ANNIVERSARY OF NURSES' ALUMNÆ ASSOCIATION. — The thirtieth anniversary of the Alumnæ Association of the Boston City and Massachusetts General Hospital Training Schools was held on the evening of Nov. 24 at the Massachusetts General Hospital. Addresses were made by Miss Linda Richards and Dr. Richard C. Cabot.

A BROWN UNIVERSITY MEDICAL SCHOOL. — It is vaguely rumored that Brown University of Providence is to take over the College of Physicians and Surgeons of Boston as a university department of medicine. It is suggested also that Mr. Rockefeller, whose interest in Brown is well known, may be financially responsible for this contemplated move.

HOSPITAL FOR ARLINGTON, MASS. — Owing to the fact that land originally given as a site for a hospital in Arlington has been considered unsuitable for this purpose, the Supreme Judicial Court has allowed the trustees of the property the right to sell. Another site has been selected, and the proposed hospital will now be pushed to completion.

INDUSTRIAL SCHOOL FOR CRIPPLED AND DEFORMED CHILDREN. — According to the last report of this institution, it is stated that the new building, which has been in process of construction, is nearing completion, but that funds will be needed for its equipment. The present building on Newbury Street has long been inadequate for the needs of this growing work.

TYPHOID FEVER AT WILLIAMS COLLEGE. — After careful investigation it appears that the recent outbreak of typhoid fever at Williams College was due to infected cream. The cases have

been attributed to cream obtained from a single can, which had been contaminated by infected water accidentally introduced into it from a receptacle in which the can had been placed to cool.

Second Jury Disagreement in Vaccination Cases. — For the second time a jury in the Norfolk Superior Court has returned a disagreement in a case involving a question of vaccination. The case, which has excited considerable interest, was one in which the town of Hyde Park, Mass., was sued for $10,000 in each of two cases for action of the school committee, which refused to allow attendance of two children at school during the recent smallpox epidemic, although they were said to have proper medical certificates regarding their unfitness for vaccination.

NEW YORK

Public Baths. — Plans have been filed with the Building Department for two new permanent public baths, to be erected for the city at a cost of $115,000 each. They are to be of two stories and constructed of brick, with limestone decorative trimmings, and will be located, one in East 11th Street and the other in West 60th Street.

Endowment of Hospital Beds. — New York Lodge No. 1, Benevolent and Protective Order of Elks, has arranged to endow in perpetuity, at an expense of $15,000, two beds in the Post-Graduate Hospital. The money is to be paid in installments within a period of eighteen months, and the hospital agrees to place the beds in a private room.

Bequest to Hospital. — W. B. Leeds of New York, president of the Rock Island Railroad, has given the sum of $10,000 to the public hospital in Richmond, Ind., where he formerly resided.

Opening of St. Vincent's Hospital. — St. Vincent's Hospital at West New Brighton, Staten Island, borough of Richmond, a branch of St. Vincent's Hospital in Manhattan, was formally opened by Archbishop Farley on Nov. 25. The premises include the spacious mansion and grounds formerly the country seat of W. F. Garner, who, with his wife and other members of his family, was drowned on his yacht, the *Mohawk*, off Stapleton, twenty-seven years ago. The hospital accommodates about two hundred patients, and will inaugurate the first ambulance service ever mantained on Staten Island. On Nov. 23 the medical staff of St. Vincent's, Manhattan, gave a reception to the archbishop at the hospital, and afterwards entertained him at a dinner at Delmonico's.

Obituary.

GEORGE J. ENGELMANN, M.D.

By the death of Dr. George J. Engelmann, which occurred Nov. 16, at Nashua, N. H., the medical profession loses a conspicuous member. The immediate cause of his death was pneumonia. Dr. Engelmann was born July 2, 1847, in St. Louis. His father was a man distinguished in science, and particularly in botany. Dr. Engelmann was graduated at Washington University in 1867, and later was given the degree of master of arts by the same institution. He received his medical education in European universities, and in the war of 1870 and 1871 was surgeon in the German army. Returning to this country, he began the practice of his profession in his native city in 1873, where he remained until he came to Boston in 1895.

During the greater part of his professional life Dr. Engelmann devoted himself to the subject of gynecology, upon which he wrote many articles, and became widely known for his work in this department of medicine. He was professor of gynecology at the Missouri Medical College until 1894. He was the founder of the St. Louis Obstetrical Society, president of the Boston Obstetrical Society, president of the Southern Surgical and Gynecological Society in 1890, one of the charter members of the American Gynecological Society and the president of the same in 1900, honorary president of the gynecological section of the International Medical Congress in 1884, honorary president of the International Congress of Obstetrics and Gynecology at Brussels in 1892, Amsterdam in 1899 and Rome in 1902; a trustee of the Missouri Botanical Gardens, St. Louis, from 1880 to 1894; and a fellow in the Washington Academy of Sciences.

In addition to his strictly professional activity he was a wide traveler and a student both of ethnology and archeology. He presented to the Peabody Archeological Museum of Cambridge a valuable collection of flints and pottery which he had collected, and the Smithsonian Institution of Washington also received from him various collections. One of his last published articles, which excited a very considerable degree of comment and discussion, was on the subject of sterility. Dr. Engelmann was a ready writer, fluent talker and a man of wide general information.

Miscellany.

AN ENGLISH OPINION OF FOOTBALL.

Prof. John F. Atkinson of London, who recently came to this country on a professional visit to Canada, saw the Yale-Harvard football

game on his way back to New York. He made the criticism that American players appeared to show too much the feeling that they were in the sport for nothing else but to win, rather than for the sport itself. "That," he said, "is a good spirit, but when you carry it to the length that you do in your American game of football, the training that the players must receive to be fit for such a game is very likely, I think, to be a disadvantage to them in after life. In England we develop our university athletes with the idea of giving them a foundation for continued physical training, that they will not give up when they finish their training." Dr. Atkinson is president f the Footballers' Hospital and Institute of London, which outside of the football season is open to other athletes, including cricketers and oarsmen. He expressed the opinion that professional football ought to have more of a vogue in America than it does, and stated that the great majority of those applying for treatment at the Footballers' Hospital (sometimes as many as twenty-five a day) were members of the hundreds of English professional teams. He finds, however, that the injuries received by these players are comparatively much slighter in character than injuries among American players.

DIABETIC INTRAOCULAR LIPEMIA.

DR. W. HALE WHITE of Guy's Hospital reports in the *Lancet*, Oct. 10, 1903, a case of diabetic intraocular lipemia, in which the blood was examined during life. The ophthalmoscopic appearances are shown in an appended chromolithograph. The arteries and veins contain blood of a similar color, a deep cream, which in the larger vessels passes into a pale salmon color. The vessels appear a little larger than usual, the whole retina is pale. The description accords with that given by Heyl in 1880 in the *Transactions of the American Ophthalmological Society*.

Most recorded cases of diabetic lipemia have been fatal, and it has been suggested that the lipemia is the cause of the coma. This view is not generally accepted, and numerous fatal cases of coma without lipemia are on record. In Dr. White's case as the patient's condition improved the lipemia disappeared. No relation could be established in this case between the lipemia and the diet.

Correspondence.

AMERICAN AND INTERNATIONAL CONGRESSES ON TUBERCULOSIS AND TUBERCULOSIS EXHIBITS FOR THE YEARS 1904 AND 1905.

NEW YORK, Nov. 27, 1903.

MR. EDITOR: During the past few months I have been the recipient of a large number of inquiries concerning the various tuberculosis congresses (American and international) which have been projected for the years 1904 and 1905. The multiplicity of these various congresses and the similarity of their names leads naturally to great confusion. It would be really too great a task to undertake to answer in full and individually all the letters with which I have been honored. I therefore ask you to grant me the space to give the desired information in your esteemed paper, so that all the readers of the JOURNAL who may be interested will have a clear idea of the various congresses, their officers and time and place of meeting.

It is announced that a congress on tuberculosis is to be held in St. Louis on Oct. 3, 4, and 5, 1904, under the name of "International Congress on Tuberculosis." Upon careful inquiries I learned the following facts about this congress: Mr. Francis, the President of the St. Louis Exhibition, has been approached by the officers of the "American Congress on Tuberculosis," which was founded some years ago by Clark Bell, Esq., a lawyer of the city of New York, to sanction the holding of an international congress on tuberculosis in connection with the Louisiana Purchase Exposition. From a letter received from Dr. E. J. Barrick of Toronto, Canada, the now president of this American congress, I learned that Mr. Francis has appointed the above-mentioned Mr. Clark Bell Chairman of the Committee on Organization. Mr. Clark Bell is also the Treasurer and Chairman of the Executive Committee of the "American Congress on Tuberculosis," season 1903–1904; a Mr. Samuel Bell Thomas of 290 Broadway, New York, is the Secretary of the latter. The officers of the International Congress are not yet elected. I was desirous to learn the names of other medical men interested in this congress, and Dr. Barrick very kindly wrote me, on Nov. 16. that he had asked Mr. Bell to furnish me the desired additional information, but nothin; has thus far been received.

The other international tuberculosis congress announced is the one to meet in Washington, D. C., April 4, 5 and 6, 1905. It is to be held under the auspicies of "The American Congress on Tuberculosis for the Prevention of Consumption." The following is a list of the officers of this latter organization: Honorary President, Dr. Henry D. Holton, Brattleboro, Vt.; Member Executive Council, Dr. Charles O. Probst, Columbus, Ohio; President, Dr. Daniel Lewis, New York; First Vice-President, Dr. E. A. Egan, Springfield, Ill.; Second Vice-President, Dr. Frank Paschal, San Antonio, Texas; Fourth Vice-President, Dr. Irving A. Watson, Concord, N. H.; Fifth Vice-President, Dr. Charles Wood Fassett, St. Joseph, Mo.; Secretary, Dr. George Brown, Atlanta, Ga.; Treasurer, Dr. P. H. Bryce, Toronto, Canada.

Before going any further I should like to call the attention of your readers to the difference in name of the two American congresses. The one is "American Congress on Tuberculosis," the other "The American Congress on Tuberculosis for the Prevention of Consumption."

The congress which was to meet under the name of "Congrès International de la Tuberculose" at Paris from Sept. 26 to Oct. 1, 1904, has been recently postponed to the year 1905. The President of this congress is Professor Brouardel, Honorable Dean of the Faculty of Medicine of Paris. The General Secretary is Dr. M. Letulle, Professor Agrégé of the Faculty of Medicine, residing at 7 Rue Magdebourg, Paris. This congress will be divided in two sections, the medical and the social:

I. In the medical section the following subjects will be discussed: (1) New methods for the treatment of lupus. (2) New methods for the early diagnosis of tuberculosis. (3) Comparative studies on the different forms of tuberculosis.

II. In the social section: (1) Etiological factors in tuberculosis. (2) Value of different means for the treatment of tuberculosis. (3) The voluntary insurance and the mutual societies in the combat against tuberculosis.

The congress will furthermore form a technical section under the name of "Museum of the Congress."

There will be held during the coming year independently of the above-mentioned congresses two tuberculosis exhibitions, one in Baltimore, Md., and the other in St. Louis, Mo. The Baltimore "Tuberculosis Exhibition" will be held in January, 1904, under the combined auspices of the Tuberculosis Commission, the State Board of Health and the Maryland Public Health Association. Details are in charge of Dr. W. S. Thayer, President of

the Commission; Mr. John M. Glenn, Secretary; Dr. John S. Fulton, Secretary of the State Board of Health; and Dr. Marshall L. Price. Dr. Henry B. Jacobs has been selected Chairman, and 250 prominent professional men and laymen have been asked to act as an advisory committee. A series of lectures will be given, the object of which will be to present the extent and effects of the disease in a striking manner. The pathologic, hygienic, sanatorium and sociological aspects of the tuberculosis problem will be practically demonstrated by specimens, charts, literature, instruments, photographs and plans. All communication concerning the exhibition should be addressed to Dr. Marshall Langton Price, 10 South Street, Baltimore, Md.

The other tuberculosis exhibition will be held in St. Louis, in connection with the Exhibition of Social Economy and under the Sub-section of Hygiene, of which Dr. J. N. Hurty of Indianapolis is Superintendent. To avoid multiplicity of exhibits, Dr. Hurty has put himself in communication with the General Secretary of the International Bureau for the Prevention of Consumption at Berlin, Professor Pannwitz, so that the exhibits which the European countries contemplate sending shall also come under his direction.

All indications point toward success of both exhibits, and it is to be hoped that they will fulfill their high purpose and at the same time be a credit to American physicians and hygienists. Considering the various congresses, I do not hesitate to express a feeling of deep anxiety. The first one mentioned, which for reason of brevity I will call "The Bell Congress," because it owes its inception to Mr. Clark Bell, has, to my knowledge, not the support of our best-known men in the field of clinical medicine, hygiene, tuberculosis pathology or tuberculo-therapeutics. The second congress in point of time, which again for sake of brevity and clearness I may call "The Lewis-Brown Congress" (names of the president and secretary), while it has many distinguished men of various state and provincial boards of health among the members, has, like the Bell Congress, thus far not among them the men we are wont to look up to as leaders in movements of this kind. No such men as Biggs, Billings, Bowditch, Flick, Jacobi, Janeway, Klebs, Osler, Otis, Trudeau, Tyson, are connected with this congress.

What are our confrères across the water to think if they hear of two American congresses on tuberculosis, and each having an international one under its auspices? The European authorities found it best, instead of having a triennial congress, to allow one more year to intervene. This will make the congress in Washington and the one in Paris convene in the same year (1905).

I hope this letter, which I address to the medical profession in America, will result in a satisfactory solution of this very complicated problem. If President Francis of the St. Louis Exposition desires that a tuberculosis congress shall be held in St. Louis, let him call to his aid some of the men whose names I have mentioned as leaders in our profession. They will counsel with him on the advisability of such a congress, and if it is decided that one should be held, Mr. Francis can be assured that the best men of Europe and America will come to St. Louis to contribute to its success.

The officers and members of the Lewis-Brown Congress must realize that they cannot expect to have their international meeting in Washington successful, when, six months later, there will be an international congress in Paris. I hope that there will be enough patriotism and national pride for all interested to realize that two American congresses on tuberculosis is an anomaly, and that, if the St. Louis Congress is to be a success, it must be in the hands of medical men well and favorably known in this country and abroad.

As a solution of the problem I beg leave to suggest the following: During the tuberculosis exhibition in Baltimore next January, all interested should meet on a certain date on this neutral ground for the purpose of coming to an agreement about a single representative national or international tuberculosis congress to be held in America. There too should be formed a national committee on tuberculosis which will be in touch with the internationa tuberculosis congress which will convene in Paris in 1905

S. A. KNOPF, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 21, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,227	329	21.43	21.93	3.58	3.00	1.05
Chicago . . .	1,885,000	467	108	19.29	14.84	3.18	3.18	1.90
Philadelphia	1,378,527	409	84	20.05	14.42	3.17	—	2.68
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	179	58	27.37	15.64	2.79	3.91	1.67
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	129	—	24.80	22.48	3.87	2.32	7.75
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	53	12	28.30	18.87	3.77	7.54	1.89
Boston . . .	603,163	169	42	18.93	14.79	4.14	1.18	1.77
Worcester . .	132,044	24	8	—	8.33	—	—	—
Fall River . .	115,549	28	14	25.00	28.57	10.71	—	10.71
Lowell . . .	101,959	20	6	5.00	15 00	—	—	—
Cambridge .	98,639	24	10	20.83	20.83	16.67	4.16	—
Lynn	72,497	14	3	7.14	7.14	—	—	—
Lawrence . .	69,766	14	3	35.70	7.14	—	7.14	—
Springfield .	69,389	11	3	9.09	18.18	—	—	9.09
Somerville .	68,110	10	—	20.00	—	10.00	—	—
New Bedford	67,198	14	7	28.56	14 28	7.14	21.42	—
Holyoke . . .	49,286	9	4	55.55	11.11	—	33.33	11.11
Brockton . .	44,878	6	1	—	—	—	—	—
Haverhill . .	42,104	7	1	14.30	28.60	—	14.30	—
Newton . . .	37,794	7	1	28.60	—	14.30	—	14.30
Salem	36,876	14	3	14.28	—	—	—	14.28
Malden . . .	36,286	12	1	25.00	25.00	—	—	8.33
Chelsea . . .	35,876	7	1	57.20	—	—	—	—
Fitchburg . .	35,069	11	2	—	9 09	—	—	—
Taunton . . .	33,656	11	2	—	9.09	—	—	—
Everett . . .	28,620	8	2	—	—	—	—	—
North Adams	27,862	7	3	28.60	—	14.30	—	—
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,049	2	—	50.00	—	50.00	—	—
Waltham . .	25,198	5	2	40.00	—	20.00	—	—
Brookline . .	22,608	2	—	50.00	—	—	—	—
Pittsfield . .	22,589	5	1	—	40.00	—	—	—
Chicopee . .	21,031	9	3	22.22	—	—	11.11	—
Medford . .	20,962	2	—	—	—	—	—	—
Northampton	19,883	2	0	—	—	—	—	—
Beverly . . .	15,302	3	—	66.67	—	—	—	—
Clinton . . .	15,161	1	1	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	6	0	—	16.67	—	—	—
Woburn . . .	14,300	8	4	37.50	12.50	—	12.50	—
Hyde Park .	14,175	3	0	33.33	—	—	—	—
Adams . . .	13,745	5	2	80.00	—	—	20.00	20.00
Attleboro . .	13,677	1	—	—	—	—	—	—
Marlboro . .	13,609	4	0	25.00	50.00	—	—	—
Melrose . . .	13,600	—	—	—	—	—	—	—
Westfield . .	13,418	1	—	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	1	—	—	—	—	—	—
Framingham	12,534	3	—	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	1	1	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	3	1	—	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 2,958; under five years of age, 723; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 626, acute lung diseases 529, consumption 302, scarlet fever 19, whooping cough 6, cerebrospinal meningitis 6, smallpox 13, erysipelas 9, puerperal fever 3, measles 24, typhoid fever 56, diarrheal diseases 83, diphtheria and croup 105.

From whooping cough, New York 2, Philadelphia 1, Pittsburg 2, Boston 1. From erysipelas, New York 1, Chicago 4, Philadelphia 1, Baltimore 1, Holyoke 1, Adams 1. From smallpox, Philadelphia 7, Pittsburg 6. From scarlet fever, New York 8, Chicago 2, Philadelphia 4, Baltimore 2, Pittsburg 1, Malden 1, North Adams 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Nov. 7 the death-rate was 16.2. Deaths reported, 4,691; acute diseases of the respiratory organs (London) 271, whooping cough 54, diphtheria 55, measles 55, smallpox –, scarlet fever 41.

The death-rate ranged from 5.7 in Kings Norton to 22.8 in Warrington, London 16.1, West Ham 16.8, Brighton 11.6, Southampton 11.4, Plymouth 18.6, Bristol 13.7, Birmingham 18.3, Leicester 11.8, Nottingham 16.5, Liverpool 19.5, Bolton 17.1, Manchester 20.5, Salford 22.3, Bradford 18.6, Leeds 20.1, Hull 13.4, Cardiff 13.0, Rhondda 15.7, Merthyr Tydfil 18.2, Hornsey 8.0.

METEOROLOGICAL RECORD.

For the week ending Nov. 21, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. . 15	30.08	40	45	34	64	60	62	W	W	12	10	C.	C.	.9
M. . 16	30.06	41	46	36	66	96	81	S	N E	3	10	O.	R.	.49
T. . 17	29.82	40	45	35	95	92	94	N	W	5	6	R.	R.	.47
W . 18	30.00	36	43	28	80	54	67	N W	N W	6	14	O.	O.	.03
T. . 19	30.33	33	40	26	66	55	60	W	W	11	9	C.	C.	0
F. . 20	30.64	30	36	25	58	53	56	W	N	9	6	C.	C.	0
S. . 21	30.66	30	36	23	67	62	64	N W	E	9	5	C.	C.	0
☞	30.23		42	30			69							.99

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING NOV. 26, 1903.

SAWTELLE, H. W., surgeon. Granted leave of absence for two days from Nov. 27. Nov. 25, 1903.

GASSAWAY, J. M., surgeon. Department letter granting Surgeon Gassaway leave of absence for one month, amended so that said leave shall be for 28 days from Oct. 13. Nov. 13, 1903.

STONER, G. W., surgeon. Leave of absence for five days from Nov. 24, 1903, under paragraph 189 of the regulations.

WICKES, H. W., past assistant surgeon. Granted leave of absence for five days from Nov. 28. Nov. 23, 1903.

CLARK, T., past assistant surgeon. To proceed to St. John, N. B., and assume temporary charge of service during absence of Assistant Surgeon W. C. Billings. Nov. 24, 1903.

LUMSDEN, L. L., past assistant surgeon. Upon expiration of leave of absence to remain at New Orleans, La., and await assignment. Nov. 20, 1903.

BILLINGS, W. C., assistant surgeon. To proceed to Washington, D.C., and report to chairman of examining board to determine his fitness for promotion to the grade of past assistant surgeon. Nov. 24, 1903.

KERR, J. W., assistant surgeon. To proceed to Washington, D. C., and report to chairman of examining board to determine his fitness for promotion to the grade of past assistant surgeon. Nov. 24, 1903.

ROBINSON, D. J., assistant surgeon. To report to chairman of examining board, Port Townsend, Washington, to determine his fitness for promotion to grade of passed assistant surgeon. Nov. 24, 1903.

CORPUT, G. M., assistant surgeon. To proceed to Washington, D. C., and report to chairman of examining board to determine his fitness for promotion to the grade of passed assistant surgeon. Nov. 24, 1903.

CURRIE, D. H., assistant surgeon. To proceed to San Francisco, Cal., quarantine, and assume temporary charge of service during absence of Passed Assistant Surgeon H. S. Cumming. Nov. 24, 1903.

MANNING, H. A., assistant surgeon. Relieved from duty at Stapleton, N. Y., and directed to proceed to Honolulu, T. H., and report to chief quarantine officer for duty. Nov. 23, 1903.

MAGUIRE, E. S., pharmacist. Department letter granting Pharmacist Maguire leave of absence for thirty days from Dec. 5, 1903, amended so that said leave shall be from Dec. 1. Nov. 21, 1903.

BOARDS CONVENED.

Board convened to meet at Washington, D. C., Dec. 7, 1903, for examination of Assistant Surgeons W. C. Billings, J. W. Kerr, and G. M. Corput, to determine their fitness for promotion to the grade of passed assistant surgeon. Detail for the Board: Assistant Surgeon General L. L. Williams, chairman, Assistant Surgeon General W. J. Pettus, Assistant Surgeon General G. T. Vaughan, recorder.

Board convened to meet at Port Townsend, Washington, Dec. 14, 1903, for examination of Assistant Surgeon D. E. Robinson, to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the Board: Passed Assistant Surgeon J. H. Oakley, chairman, Passed Assistant Surgeon H. S. Cumming, Passed Assistant Surgeon M. H. Foster, recorder.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING NOV. 28, 1903.

E. O. HUNTINGTON, surgeon. Sick leave extended three months.

A. M. FAUNTLEROY, assistant surgeon. When discharged from treatment, ordered to the "Scorpion."

J. F. URIE, surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the "Missouri."

W. R. DUBOSE, medical inspector. Ordered to duty as assistant to the Bureau of Medicine and Surgery, Navy Department.

C. T. GRAYSON, acting assistant surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and ordered to the Naval Hospital, Washington.

SOCIETY NOTICES.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. —The thirteenth annual meeting of the Western Surgical and Gynecological Association will be held in Denver, Colo., Dec. 28 and 29, 1903.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION. —The thirteenth annual meeting of the Mississippi Valley Medical Association will be held at Cincinnati, Ohio, Oct. 11, 12, 13, 1904.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. —The sixteenth meeting will be held at the New Piedmont Hotel, Atlanta, Ga., Dec. 15, 16 and 17, 1903.

RECENT DEATHS.

HORACE CARR WHITE, M.D., M.M.S.S., died in East Somerville, November 26, 1903, aged sixty-seven years. Dr. White was born in Bowdoin, Me., and was graduated from the medical department of Bowdoin College in 1859. He practised for a time in Lisbon Falls, Me., and in 1861 entered the Union Army as assistant surgeon in the Eighth Maine Regiment. In 1874 he established himself in Somerville, and has since been prominently identified with the Somerville Hospital and medical matters in that community. He was a member of many medical and non-professional societies.

BOOKS AND PAMPHLETS RECEIVED.

Infectious Diseases. Their Etiology, Diagnosis, and Treatment. By G. H. Roger, Professor Extraordinary in the Faculty of Medicine of Paris. Translated by M. S. Gabriel, M.D. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1903.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By Prof. Dr. Carl von Noorden. Authorized American Edition. Translated under the direction of Boardman Reed, M.D. Part IV. The Acid Autointoxications. By Prof. Dr. Carl von Noorden and Dr. Mohr. New York: E. B. Treat & Co. 1903.

Report of the Commissioner of Education for the year 1902. Vol. I. Washington, D. C. 1903.

The After-Treatment of Operations. A Manual for Practitioners and House Surgeons. By P. Lockhart Mummery, F.R.C.S. (Eng.), B.A., M.B., B.C. (Cantab.). Illustrated. New York: William Wood & Co. 1903.

The Antiseptic and Germicidal Properties of Glycerin. By M. J. Rosenau. Bulletin No. 16. Hygienic Laboratory, Treasury Dept., Washington. Sept., 1903.

Some Remarks on the Maternal Circulation in Pregnancy. By H. O. Nicholson, M.D., M.R.C.P. (Edinb.), of Edinburgh. Reprint. 1903.

Some Recent Advances in Medical Therapeutics. By Thomas E. Satterthwaite, M.D., of New York. Reprint. 1903.

The Purin Bodies of Food Stuffs and the Rôle of Uric Acid in Health and Disease. By I. Walker Hall, M.D. Second Edition (Revised). London: Sherratt & Hughes. 1903.

The Practice of Obstetrics. Designed for the Use of Students and Practitioners of Medicine. By J. Clifton Edgar. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

Spotted Fever (Tick Fever) of the Rocky Mountains. A New Disease. By John F. Anderson. Hygienic Laboratory Bulletin No. 14, M. J. Rosenau, Director. Treasury Department, Washington. 1903.

Original Articles.

GENERAL PERITONITIS COMPLICATING SCARLET FEVER.*

BY JOHN H. MCCOLLOM, M.D., AND JOHN BAPST BLAKE, M.D., BOSTON.

GENERAL peritonitis due to streptococcus infection as a complication of scarlet fever is extremely rare. That this condition may exist and not be recognized is possible, for the patient in a given case may be so delirious as to prevent a diagnosis being made, or the prostration due to the attack of scarlet fever may mask the characteristic symptoms to such an extent as to render a diagnosis impossible. When we take into account the comparative frequency of endocarditis, pericarditis and pleuritis, it would seem to prove that this complication is possibly more frequent than is generally supposed. In a clinical experience of over 8,000 cases of scarlet fever there has been a limited number of patients whose symptoms would cause one to think of the possible occurrence of this complication, but the speedy subsidence of all symptoms and the ultimate recovery of the patients would seem to prove that peritonitis could not have existed. In two instances, however, out of the 8,000 cases peritonitis did actually occur, as is shown by the following clinical reports. In these cases the attacks of scarlet fever were not specially severe, and there was no cause for anxiety until the occurrence of the abdominal symptoms. It was not reasonable to suppose that scarlet fever *per se* was the cause of the condition, but that it was due to streptococcus infection. The great difference in the severity of attacks of scarlet fever is due not to the poison of scarlet fever itself, but to streptococcus infection. This has been proved many times by means of cultures. If streptococci are found in cultures from the nose and throat the prognosis is graver than when this organism is not found. A careful study of the literature of scarlet fever proves that general peritonitis as a complication in this disease is extremely rare.

Frankel, in *American Medicine*, Vol. 2, No. 29, reports three cases of necrotic ulceration of esophagus and stomach following scarlet fever. General peritonitis is not mentioned.

In Gould's "Year Book" no cases are reported in the last four volumes.

In the "Reference Handbook of Medical Science," Vol. 7, page 313, this statement is made: "Peritonitis occurs most rarely, and is usually purulent."

Osler, in his "Practice of Medicine," does not allude to peritonitis as a complication of scarlet fever.

Wood and Fitz, in "Practice of Medicine," make a slight allusion to this condition.

In the "American Text Book of Diseases of Children" it is stated that general peritonitis may occur as a complication of the various exanthemata. Page 580.

In Holt's work, "Diseases of Infancy and Childhood," the following passage occurs: "Of acute infectious diseases peritonitis is most frequently seen with pneumonia and scarlet fever." Page 416.

In the "Cyclopædia of Diseases of Children," Keating, general peritonitis is not mentioned.

In Oppenheim's "Medical Diseases of Children" he says that general peritonitis may be traced to the acute infectious diseases. Page 203.

In Allbutt's "System of Medicine," Vol. 2, page 150, tables of complications are given not mentioning general peritonitis, but says that other complications occur in less than 1% of cases.

Bauer, in "Ziemssen's Cyclopædia of Practice of Medicine," Vol. 2, page 282, and Wardell, in Reynolds' "System of Medicine," say that scarlet fever is sometimes a cause of general peritonitis.

In Pepper's "System of Medicine," Vol. 2, it is mentioned that general peritonitis may follow scarlet fever.

Somerset, in the *New York Medical Journal*, Vol. 72, page 981, in a study of 2,500 cases of scarlet fever and complications, does not allude to general peritonitis.

It will be seen that although some of the authors above quoted allude to the possible existence of general peritonitis in the course of scarlet fever, they do not report any specific cases, and perhaps do not lay sufficient stress upon the possibility of its occurrence. For this reason the two following cases are reported in detail. Both present several symptoms in common, but they differ in course of the disease, the treatment and the result. It is possible that mild peritoneal involvement may be found on careful examination to be more common than is at present believed; but if the following cases are typical of their class, another serious element is added to the already too long list of scarlatinal complications and sequelæ:

CASE 1. J. E., five years of age, entered the South Department of the Boston City Hospital on April 10, 1900, suffering from diphtheria. Both parents were consumptive; the child had had measles in the previous summer, and had been sick with a "sore throat" for five days before entrance. Two days after entrance the skin flushed, and on the following day the diagnosis of scarlet fever was obvious There was some nasal discharge. Twenty-three days after entrance he vomited and complained of pain in the abdomen, but nothing could be found on physical examination. The urine became slightly albuminous and the tenderness and rigidity of the abdomen continued, as did the vomiting. Ten days later the umbilicus began to protrude, the area around it being reddened, swollen and painful; the abdomen was distended and dull in the flanks. Forty-three days after entrance, the child was tapped in the middle line of the abdomen, and twenty-one ounces of pus withdrawn, a culture from which showed streptococcus pyogenes; on the following day the umbilicus ruptured and fluid leaked from it for several days. On May 31 the child was aspirated in the seventh space, left posterior axillary line, and a few drachms of pus withdrawn from the thorax; on this day the right ear was noted to be discharging slightly. Two weeks later, while steadily improving, his friends insisted upon taking him home, and as he had finished desquamating he was discharged against advice, signs of fluid being still present in the chest and abdomen. Four months later

* Contributed to the fourteenth series of Medical and Surgical Reports of the Boston City Hospital.

he was shown at a meeting of the Boston City Hospital Clinical Club, apparently well.

CASE II. W. S., thirty-one years of age, was admitted to the South Department April 22, 1903. His family history was good; he had had measles, pertussis and varicella during childhood, and rheumatism later. He had been sick for six days before entrance, the onset being accompanied by sore throat and vomiting. He had a brilliant scarlet fever eruption, and also a systolic murmur at the apex, which was in the fifth space outside the nipple line. The abdomen was negative. He progressed without complications, his general condition being good, until thirteen days after entrance, when a sight trace of albumen was found in the urine, and he was slightly nauseated. On the following day there was pain in the abdomen, but no spasm or tenderness. Early on May 9, four days after the appearance of the albumen, he complained of great abdominal tenderness and passed no urine at all. Distension, rigidity and muscular spasm rapidly developed. The legs were drawn up and the face became pinched. He was seen by Dr. Abner Post at 6 P.M., who recommended laparotomy, which was performed by Dr. J. B. Blake about two hours later. Under ether the abdomen was opened in the median line below the umbilicus. There was free discharge of thin pus, followed by a curd-like substance. The intestines were red and congested. The appendix, gall bladder and other abdominal organs were negative. The peritoneal cavity was flushed with several quarts of hot saline solution and drained with seven gauze wicks. No obstruction of the intestines was found, though they were everywhere distended with gas. The patient rallied, and for a few hours seemed a trifle better. The suppression of urine continued, however, in spite of salt infusion and enemata; the vomiting increased the pulse became weaker, and he died twenty-five hours after the operation. Culture from the pus showed streptococcus. The urine, two days before operation, was smoky, contained a trace of albumen, and a sediment of normal and abnormal blood, blood casts, epithelial and refracting casts, a small amount of pus and some round cells. At the time of operation the urine contained 1% albumen.

The autopsy was performed on the following day. The undertaker had already partially embalmed the body, punctured the intestines and stomach in numerous places, and filled the abdominal cavity with an acrid fluid containing formalin. This changed the peritoneal appearances decidedly. No retroperitoneal focus of pus was found. There was an easily separated fibrin layer on the diaphragm, spleen and liver, and a similar layer found lining both pleuræ.

There were small cauliflower masses of fresh red deposit on a chronic thickening of the edge of the mitral valve curtain, with small amounts of fibrin clinging to it.

The capsules of the kidneys were under some tension and yielded a slight hernia of the substance on section. The left kidney was only one-third the size of the right. There were two complete ureters from each kidney to the bladder and four distinct openings into the bladder. This is a very unusual condition, and is, according to Gould, the eleventh case on record. (A. H. Gould, Am. Journal Med. Sciences, March, 1903.)

The anatomical diagnosis was:

Acute fibrino-purulent peritonitis (cause unknown).
Acute bilateral fibrinous pleuritis.
Acute vegetative mitral endocarditis.
Acute nephritis.
Acute splenic tumor.
Acute bronchitis.
Celiotomy.
General arterio-sclerosis.
Chronic mitral endocarditis.
Bilateral double ureter.
Chronic adhesive pleuritis.

These two cases present in common a series of complications, a late development of the peritoneal symptoms and an absence of local purulent foci. The family history of the child suggests a tubercular peritonitis, but the culture from the pus showed streptococcus. The child's temperature began to rise and fluctuate several days before abdominal symptoms were noted; part of this rise may have been due to an involvement of the middle ear, but at least a part of it was probably due to the beginning peritoneal infection, which was gradual and comparatively painless in its onset. In the other case, the onset was very acute, suggesting sudden intestinal obstruction and rendering an operation imperative, in spite of the almost complete suppression of urine.

We had, therefore, in both cases, a peritonitis occurring late in the course of scarlatina, due to streptococcus, and independent of any local inciting cause; it was apparently only a part of a very widely distributed general infection involving other serous cavities, as well as excretory organs, special sense organs, and a part of the circulatory system. It seems fair to assume, therefore, that the peritoneum was infected through the blood, as was also the pleura. This is of course a difficult thing to prove. Cultures taken from the blood in the fatal case might have thrown some light upon it. There is no good reason, however, for doubting that infections of the peritoneum through the blood may occur. There is no more obvious explanation in this case and much that would be consistent with it.

TREATMENT.

If the signs of peritoneal infection are slight in degree and extent, palliative measures alone, such as enemata, turpentine stupes, rectal feeding, will suffice. If, however, the pulse steadily rises, and pain, tenderness and spasm increase, the indication for drainage is imperative. The condition of the kidneys is the most definite contra-indication to operation, and whenever possible cocaine should be substituted for ether. The operation should consist of a rapid celiotomy, thorough irrigation with hot salt solution and drainage. Unless there are definite local symptoms, the incision should be in the middle line. To favor drainage, hot, moist dressings, frequently changed, are desirable. Salt solution under the breasts and by rectum, and water by mouth if the patient is not vomiting, are all definitely indicated. Stimulation should be free, but alcohol may be contra-indicated by the nephritis. Caffein, strychnia and digitalis may be used energetically.

The prognosis is always grave, and a successful outcome like that in the first case may not often be anticipated.

WAS HE INSANE? A STUDY IN MENTAL DIAGNOSIS.[1]

BY C. A. DREW, M.D., BRIDGEWATER, MASS.

Medical Director Massachusetts State Asylum for Insane Criminals.

H. J. B., a Hebrew, thirty-five years old, born in England, was admitted to the State Asylum for Insane Criminals, Jan. 22, 1902, from the

[1] Read before the Plymouth District Medical Society, April 15, 1903.

State Prison in Charlestown, where he had been serving a five to nine years' sentence from March 26, 1897, having been convicted as a "common and notorious thief." The medical certificate on which his commitment was based reads as follows:

CHARLESTOWN, JAN. 17, 1902.

HIS EXCELLENCY W. MURRAY CRANE, ETC.: We have examined H. J. B., thirty-five years of age, committed March 26, 1879, as a common and notorious thief, sentence of from five to nine years, and would respectfully report.

When B. was first committed he worked in the harness shop. He began to agitate the men and was placed in Cherry Hill, where he began to write to all the authorities and to lawyers, telling of the illegal actions of the officers of the prison and wishing to begin actions in law against some of them. He claims to have been admitted to the bar in Dakota. He was arrested in London, Brussels and New York as well as Boston. Perhaps there is no inmate of the prison who has given more trouble to all concerned than he.

At our first examination he began telling in legal terms how unjustly he had been treated before his trial and claimed that from the first he was a victim of persecution and conspiracy; that his sins were sins of omission (neglecting to say his prayer often) only, and not commission. He related how many people would be defendants in cases he would bring against his persecutors. He also showed some wood and iron that had been placed in his food. The examination lasted over two hours.

At the second examination he recognized us and began to say that we were engaging in a conspiracy to pronounce him insane in order that his enemies might get possession of his property. He rehearsed nearly all that he said at the former visit and taking his oath that he was an innocent man. That in all of the former arrests in London, Brussels, New York and elsewhere he had been exonerated, and that the so-called obtaining money under false pretences was proven to be legitimate business. He asked us to examine two bottles of medicine that had been given to him from the prison dispensary and then demanded that we should make a thorough analysis of them both, but at once claimed that we should use neither what he showed us at the former visit nor the request for examination of the medicine at this visit as evidence of delusions on his part. He quoted law to prove that if we did not at once take steps to inform the proper authorities that he was unjustly held, improperly treated and a victim of an outrageous conspiracy, we were guilty of concealing evidence and would be defendants in suits which he would bring against us. At times he would stop his conversation and examine if any people were listening to him; at another time he would get up from his chair, go to the door, and ask for the deputy just to see if he were trying to overhear our talk, although we had told him that the deputy had returned to the yard. He is very suspicious of almost everybody that comes in contact with him. We were with him over four hours at the second examination, although we were convinced at our first that B. is a litigious paranoiac. The little legal knowledge that he has is the nucleus about which are formed all his ideas of his relations to his fellowmen and their conduct to him. He has employed no less than six lawyers since he has been an inmate of the prison and has discharged them all because he became convinced that each one had been influenced by the warden and he has told about others he had employed and discharged.

We feel that his proper place is at the asylum for insane criminals.

It may be remarked that this certificate is long and strong. It seems to establish delusions of persecution — one of the most characteristic symptoms of that form of mental alienation called paranoia. We learn that this prisoner has been under observation nearly five years, that he began to agitate other prisoners and was placed in Cherry Hill soon after his sentence in 1897. It may be explained that Cherry Hill is a building with large, well-lighted and well-ventilated rooms for the isolation of incorrigible prisoners. We learn further that the prisoner was very insistent in his efforts to bring suits at law against the prison officials and others, and from other sources we learn that in the opinion of certain friends he had a mania for bringing suits at law even before his last arrest and sentence. Those conversant with psychiatric literature will recall that under the names of "querulent insanity," "quarreling insanity," or "litigious insanity" the majority of Continental writers as well as prominent alienists of England and America have written concerning these people with a so-called "mania" for quarreling. The majority of medical writers have considered certain of these people insane, even when no clearly defined delusions could be demonstrated, and have generally classed them as paranoiacs,[3] although Krafft-Ebing seems inclined to put them under the heading of "moral insanity" and Berkeley considers the litigationists better classed with the ethical inbecilities. So far then as this propensity for litigation has weight, — and we shall wish to refer to this phase of the question again, — it substantiates the diagnosis of the committing physicians, for it is counted competent supporting evidence of mental degeneration by the majority, at least, of recognized authorities in mental medicine. The extreme suspiciousness of the subject is another strong pillar supporting the diagnosis, because extreme suspiciousness is a common and prominent characteristic of most all paranoiacs.

Passing the leading symptoms in review, we have a strongly litigious propensity and apparent delusions of persecution, conspiracy and poisoning, with extreme suspiciousness, — the common accompaniment of such delusions, — truly a strong syndrome on which to base a diagnosis of litigious paranoia. If the suspicions of poisoning and ideas of persecution could be established beyond peradventure as delusions, in the medical sense, and if it could be shown that the man had at some time been frank, truthful and honest, insanity would be established beyond a reasonable doubt, although we might then have doubt as to the form of insanity. But the whole evidence tends to show that the man was never truthful, frank or honest, and it is almost self-evident that a man's natural temperament, character and education must be considered before we can determine whether he reacts in a physiological or pathological manner to his environment.

On admission, physical examination of H. B. was negative, except that the pupils were seemingly myotic, — reacting very slowly to both light and accommodation, — while the patella reflex was very slight. These variations from the average were not greater than is occasionally found in individuals in whom there is no suspicion of organic disease of the central nervous

system; and, as frequent subsequent examinations failed to disclose other neural anomalies of significance, the conclusion seemed justifiable that the apparent myosis and diminished knee-jerk were normal to the individual. It ought to be noted, however, that the opposite condition, — a dilated pupil and exaggerated patella reflex, — is more common in patients of a neurotic organization, to which class H. B. clearly belonged, and that a spastic myosis is about the most common eye symptom in paresis. The mental examination was continued for from one to two hours at a time for several consecutive days and the first impression was strong that we were talking with a victim of early paresis. Paretic, paranoiac or moral imbecile seemed to be the diagnostic question.

Our patient manifested quite enough egotism for a paranoiac. He was perfectly coherent and had a good command of English, but his memory seemed poor, in that his long story would differ in some essentials from day to day and there would be many inconsistencies in his statements of alleged facts. "Oh, I do not claim to be a lightning calculator," he would say, when his attention was called to the fact that his dates were badly awry. It is written in our case records that "His story is very disconnected, either because of a disturbed brain or because he is lying so rapidly that he cannot maintain the proper sequence of events. Any discrepancy brought to his notice he immediately cleverly explains, but in a way to vary his original stories considerably. The good nature and optimism which he shows, the ease with which he speaks of large amounts of money and extensive commercial interests, his good-natured egotism, the many discrepancies in his stories, the readiness with which he explains, though not always satisfactorily, together with some suspicious physical signs, the contraction and slight mobility of both pupils and almost absent knee-jerk, give rise to a strong suspicion of paresis."

This is not at all like the typical paranoiac if we use the term in the restricted sense of the "original nonomania" of Sohmer and the "primary nonomania" of Spitzka and Kellogg. The paranoiac's memory is commonly good, often preternaturally good. Morbid introspection has seemingly fixed every event of his life in self-consciousness and so exaggerated its importance that each personal experience for a series of years is faithfully reproduced as to dates and consistently as to sequence of events.

With the paretic the symptom-complex is strikingly different. Here we have an organic disease of the brain, a chronic meningitis with atrophy and softening of the brain cortex, the product of "civilization and syphilization," as Krafft-Ebing has tersely put it. A good-natured dementia is the leading characteristic. Grandiose accounts of his experiences — apparent mendacity — is the rule; petty acts of dishonesty are very common. A jolly good fellow and a spendthrift, a lover of good wine and bad women, in the early stages, frequently a petty criminal later on, almost surely bedridden in four years, with far advanced motor and sensory palsy, he yet insists that he is "all right," that he has lots of money, hosts of friends, many wives, perhaps, and that he never felt better in his life.

The imbecile is of another kind, for his troubles are many and his chief mission seems to be to make trouble for others. That particular imbecile called the moral imbecile — because the moral sense is most conspicuous by its absence — has been well called first cousin to the paranoiac. It is doubtless true that a bad heredity — an unstable nervous organization, a vice of constitution — is the soil from which both have grown, yet there are important differences.

H. B.'s previous history as related by himself was so long that he was asked to give it to us in writing, hoping to get an abridged edition. The written autobiographic statement was "toned down" a good deal from his verbal statement, and I can only include enough to illustrate the nature of his statement and the writer's coherence of thought.

FEB. 5, 1902.

GENTLEMEN: In accordance with my arrangement with you, I herewith send you a brief statement relative to certain transactions and facts related to you verbally. I am the son of M. B., of London, England. My father was owner of the city of London Printing Works at one time, also owner of the Rotary Ticket Printing Machine (patent). My father was a promoter, financier and private banker in London and has successfully floated many large companies. I was informed that my father had purchased and brought out the International Cable Company, the Bermuda Cable Company, the Quartz Hill Gold Mining Company, the Parcherry Mining Company, the Wala Wynad Mining Company, the Santa Rosalia Mining Company, the Washington and Seattle Breweries Company, the Iowa Pacific Railway Company, and many other large companies too numerous to mention, but which will be more particularly set forth by my relatives and others. . . . I am a lawyer, studied law in London, England. Educated in Dublin and London. Was manager for M. Barn & Co., Law and Mercantile Agency, New York. Was manager and president at one time of the Joseph Jackson Company, incorporated, at 258 Washington St., Boston. Was manager for the Rollins Harlow Company at 1 Beacon St., Boston. I was in partnership with Frederick H. Jackson, Real Estate Broker, 23 Court St., Boston, Mass. I am informed that the said Frederick H. Jackson is a man of means. I have lived at Wellington, Mass., and kept two horses and carriages and owned my own furniture there. I lived at 321 W. 14th St., New York city, and owned furniture there and valuable paintings. I am perfectly willing to make any statements written or verbally as to the above facts and you have my full permission to write to the parties above referred to.

(Signed) H. J. B.

This rather incredible story written with care, without the embarrassing factor of a cross examination, was not made wholly of imaginary "mind stuff" as are the roseate ideas of the general paralytic. He was the son of a once wealthy Hebrew whose name and address he correctly gave. He was petted and very much indulged as a youth, as will be shown by other evidence. The proportion of truth and falsehood in the history, as a whole, could be fairly

judged from his mother's letters, which have an intrinsic value of their own besides throwing a flood of light on our patient's peculiar mentality. It will be admitted that the absurd statements of the paretic and the persecutory and expansive ideas of the paranoiac are sincere beliefs, due in the one case to active brain disease, and in the other class to a slowly progressive psychical degeneration. On the other hand, many sane people delight in " drawing the long bow " and the talent for weaving a thread of truth into a fabric of falsehood so cleverly that the single thread will first catch the eye of the casual observer is a characteristic accomplishment of the moral imbecile, and the habitual liar whose sanity is not usually questioned. When cornered by a cross examination, H. J. B. would admit that some of these many companies successfully ' floated " by his father were " brought out " on paper only, and I would here observe that nothing more clearly marks the difference between the absurd fancies of the paretic or the systematized delusions of the paranoiac and the " fish stories " of the imbecile, than the efforts of the latter to support each falsehood with two more of a little different shade. A series of letters, remarkable in some ways, were received from patient's mother. These letters, to my mind, are of sufficient psychological interest to be read in full, but in a reasonable time limit I can only quote here and there. In her first letter, dated Feb. 7, 1902, she writes:

Your letter to my husband was handed to me. I do not know as I shall give it to him, as he is at present suffering from acute heart trouble. In the meantime I shall be perfectly explicit with you, although I am not filling up your enclosed form. My son is of ill-balanced mental and physical organization, neurotic, hysterical, of strong passions, weak moral force (in fact of no moral fiber), no sense of duty, a victim of an exaggerated form of intellect which causes him to see and judge matters as a horse's eye sees an object. He is clever and artful and in him the disease would be moral insanity. A sister and brother of mine are in the asylum. Our unfortunate son was not properly brought up. His father showed him an extravagant example and would not have him taught bodily work. He was indulged in every whim, as his father is a man with no sense of responsibility.

A second letter, dated Feb. 28, '02, gives added information of interest and further illustrates the mother's mental organization. She writes:

Anything you ask shall be answered per return mail. . . . My son's affliction did not spring *ab initio* from any involvement of neural processes, although through hardship injury may have subsequently occurred. I assure you that instead of his conceptional faculties being impaired, to my mind they are vivified. Strange to relate, more like a fairy tale, every word he related, as you have written, respecting his father and himself is truth, but in the abstract. In detail, they would admit of a very different construction to what he would have you understand. He has not drawn on his imagination for the events of which he made you acquainted, but he is either mendacious or misled as to the results. You asked me at what period I noticed a change in my son's demeanor. He was always obstinate and ungovernable and when at a very youthful age he consorted with bad companions of both sexes, then the influence of a mother was quite overthrown. Mind, he seemed to be possessed of great ability and great industry and huge capacity to work in what occupation suited him. Here we get great force misapplied producing *crime*, as it invariably does. His defects are congenital and the law of heredity in this instance is painfully substantiated. His, notwithstanding his great capacity, is a low order of human intellectuality. Two senses fail him to balance the overwhelming forces of his nature: *Sense of danger, of the law of results and sense of responsibility.* Admitting this, then where can the poor human vessel look for ballast. In palliation and extreme grief for the strait he has fallen in and the awful result of the " sins of the fathers," etc., in pity bear in mind that he had an over-indulgent father, who had not the capacity to control him or to show him a good enough example to restrain him. I was adjudged a hard mother because I wanted to spare the child and not the rod. As this tended to break the peace and disturb the rest of the household I was bade to desist. Hence the result. . . . They tell me that I am a pessimist, that unhappy being whom everybody wants to avoid for the sake of the bliss of living temporarily in a fool's paradise. It may be true. Can I help it? . . . Have I not been deprived of the power to enjoy? I am resigned, for an Almighty power animates me to throw myself into the breach and save those that would otherwise be lost. I have brought up ten children credibly (except the eldest). All my daughters are exceptional honors to me. My husband's businesses have failed and we are in financial straits. I am at the helm and dare say will steer through all right with Divine help.

On March 28 the mother writes again:

As you see him now so he has always been, hounding me for money to gratify his whims to squander it. On the other hand, from his writings, etc., he is not a fit subject to be in a lunatic asylum. In justice I must say this, because people are at large who are not so logical or constructive as he is. If people with an *idée fixé* were always confined, the world would be one huge lunatic asylum. Although he is morally obtuse, and although in the world, not of the world, merciless, ungrateful, unnatural and unprincipled, without the slightest force of natural instinct, morally a monster, still he is not what many thousands would pronounce insane. We know he is the victim of an obscure brain disease. Many times puzzled, I often think it is malformation of the brain, with strong passions, and no moral force to govern all. . . . He was always litigious. Of course there is policy and method in this, for when a swindler is discovered he relies on his clever lawyer to find a technical point for him to elude conviction and consequences. This is all to me something too shocking from my point of view and really my brain seems to be giving way. I feel as if I had been smelling nitrate of amyl. I am an old woman and shall be getting brain lesion with it all, no doubt paralysis. My nerves and muscles all ache. I am fast losing power of volition. What shall I do?

While physicians may smile at the mother's analysis of the case, I think members of this society will agree that her observations were keenly intelligent and her deductions not very wide of the mark. If one wished to write a thesis on the relationship between genius and insanity to prove Dryden's oft-quoted clause, " Great wits are sure to madness near allied," the forceful and pathetic letters of this highly-gifted Jewish mother would serve as strongly presumptive evidence. The mother writes again on April 10:

It is not that Harry is so litigiously mad. He is revengeful, it is true, and craving for notoriety. What he really is, is a blackmailer — a past master in the art of insinuation and blackmailing. When he goes to New York he will commence the blackmailing profession over again and get himself run in again. No, Mr. Drew, I will not undertake the onus of accepting the charge of him. . . . It would be better for me to go to the devil than to bring the devil upon me. . . . I wonder if you read

his one part deceitful letter, the other part as impudent, arrogant and overbearing as ever.

Apparently the mother's high tension organization had been taxed almost too far by the son's importuning letters, covertly threatening if she did not send more money to publish his grievances in the newspapers, using his own notorious record as a weapon to extort money from his family through their natural fear of a sensational publicity which would certainly injure the other children and further stain a respected family name. Twelve days later she writes again and now, the mother instinct being again dominant, she argues in defence of her son that he may not be returned to prison, even though she cannot have him sent to an asylum in England, as had been proposed. Both explanation and argument are so creditable to the mother's heart and intelligence, and so interesting from a psychological viewpoint, that I venture to quote further from a letter dated April 22:

While I thank you for your goodness in endeavoring to get Harry sent here to an asylum in London, I dare not bid him to be brought over. Did I do so it would at once break up the home and scatter its inmates. My daughters are working might and main at honorable professions to help me to get a living for themselves. One of them is engaged to an influential man here. My husband has only to receive a shock — he will die. Therefore they object to my bringing over sure trouble. They affirm that Harry would not rest in an asylum here, but would insist and succeed in making himself heard to air his grievances. The newspapers would ring with the unusual news, the members of my immediate family, where they were previously respected, would be surely shunned, no doubt their professional engagements canceled, my husband killed, myself paralyzed by despair, and all for what? To save the feelings of one unworthy refractory being. How can I contemplate the commission of such a crime? I dare not do it. Dr. Drew, that man cannot be sane. Nor is he. It may be true that were he to speak in his lucid, able and logical way to even experts in insanity they would not detect the flaw but declare that only a man in possession of his senses could so ably argue and manipulate documents and seize on technical points of law to get in the thin edge of the wedge to let himself out.

They might not agree that his is an obscure form of dementia, a case, to dive deeply, clearly and concisely into it, where the objective mind is more or less clouded or impeded whilst the subjective mind is permitted a force and liberty which would not belong to it were he in a condition of complete sanity. With his avowed declaration to fight law and power, to go to New York to blackmail Chapin, regardless of consequences, even any medical man decided to maintain that he is as lucid and logical and clever as any other man on the same plane, if not even more so, must at the same time admit that there is a departure from the normal balance and recognize his mental irresponsibility. The man has gone mad. His subjective mind is sole and supreme in the display of its functions. Thus — what is it we perceive? Why — a recollection of one rooted experience, one grim resolve, the *idée fixé* of the monomaniac, which will possess and play the tyrant with his mind, cause him to pursue his suicidal purpose to the bitter end, always regardless of consequences, as unreasonably and fatally as the moth flies in the flame.

The contents of these letters is my best excuse for the lengthy quotation. The son's style in writing is strikingly like his mother's. The following, to his wife, was written on one of those days when he was apparently on good terms with her, but he was a master of blandishments to obtain money or gain a fancied vantage:

MARCH 12, 1902.

MY OWN DARLING WIFE: Just a few lines to tell you I received a letter from my mother on Monday and it was enclosed to Dr. Drew. I understand my mother's *meaning* and everything is satisfactory. When you come to see me on the 26th of March I will give you a draft for some money and I will explain things fully to you what to do. I shall draw on a certain person at sight and the money is to be paid to you and you alone, as you are my wife and I cannot trust strangers. I shall not call upon you to pay any one else but Mr. Fishacher, yourself and myself. I have received some very satisfactory letters from New York and Boston. I cannot write it. Everything is going *well*. Cheer up, little wifie. God is helping us. I have had some blank drafts sent to me and I shall have a letter all ready for you and draft on the 26th of March positively. Write to me at once and tell me all the news. Write to my mother again and tell her not to write to Dr. Drew again. Be careful what you and Mr. Fishacher say to Dr. Drew. I shall explain all when I see you. I have some startling and good news for you. I dreamed last night of you all and of Queenie playing the piano and Clarence. All you, my three darlings, were kissing me and loving me. I am lonely at times without you, dear. You said that our children would write to me last Sunday. I have not received any letter yet. Write often to me and cheerful letters, as it is good for me. I am taking fresh air as you wished. Your poor husband is battling against the breakers, but he will come into port and although tossed and wounded on the ocean of life sees the lighthouse not far off. Our ship will soon sight land, my wife. Cheer up. God bless and guard you all. Your loving husband,

(Signed) H. J. B.

P. S. — Goodnight, love, and kisses . . . . Be sure and be here on the 26th of March. Write me you are coming, love. . . .

The following, to his mother, was dated March 28, 1902:

MARCH 28, 1902.

MY OWN BELOVED MOTHER: Your letter duly received enclosed again. I again ask you to write to me direct to Mr. H. J. B., State Farm, Bridgewater. It is not necessary to put word "asylum." Now let us come to some common-sense talk. I agree with you it is bad to be robbed by lawyers. Recapitulation, recrimination and transportation seems to be your peculiar mania and writing chronic lovely incriminating epistles about insanity in my family and such untruths and foolishness, and giving Dr. Drew and the State Board of Lunacy the power to hold me indefinitely. You are trying to burv me alive and turning the key on me with double padlocks. Clever muddlers! I had arranged everything well. Mr. Fishacher and my wife came on the 26th of March and in the presence of Dr. Drew my lawful wife said the words, "Dr. Drew, I have come for my lawful husband; his sentence has expired, and I, his lawful wife, am here to take him into my custody." Dr. Drew replied, "I regret, but I must have an order from the State Board of Lunacy." Now the State Board of Lunacy is a tool of Dr. Drew's and it is simply a seesaw formula game, exposed in the newspapers before, robbing me and burying me alive in a living tomb. However, Mr. Fishacher has arranged with the Commissioners to give me a ticket of leave and the State Board of Lunacy must let me go if my wife, who is my lawful legal guardian, takes me in her custody. Everything is arranged and poor Gertrude is on deck ready. We shall not make a demand until the $250 is here. Send the draft to Gertrude at once. Do not muddle matters, for God's sake. I shall follow out your idea in many ways. Remit to my wife, Gertrude B., at once. I am satisfied she is faithful and loving. She lay in my arms all day and is pining to get me back with her and the children. Do not delay a moment. Leave all to me. Mr. Fishacher and Gertrude and myself will arrange everything. On receipt of the money, wifie will get me a suit of clothes, some

shirts and pay my fare and I shall come out right. The reason why I want the money at once in my wife's hands is because when she sees the Board of Lunacy with Mr. Fishacher she will state that she has money to take care of me and that I will not be a charge on the state, and Mr. Fishacher has got the ticket of leave ready from the commissioners and police. Remit to Gertrude at once. Do not muddle me into my coffin, as that will be the next step — my coffin. You have all muddled me into a madhouse and the next will be death. Stop muddling. You have a dangerous pen, writing about insanity. The insanity dodge adopted by lawyers is good in some cases, but not in all. Use tact and judgment. Stop this ghastly work of thwarting my able efforts for release. Remit and you will soon get a cable from me when I am free. Gertrude must have money in hand to state she is able to take me Do you understand or are you obtuse? When you wanted money I sent it to you. I need help now from a lunatic asylum. I know, my own beloved mother, you mean well, but it is a case of life and liberty and I must speak plain. Be sure and remit at once. Instead of your coming over, my wife will do your work for you and take me. Send her the money. I can be out now in an hour, but she must have cash to say I am all ready and not a burden to the state, etc. I am now at your pleasure, waiting in the madhouse for funds for help from you. Cable remitting. May God bless you and keep you and guide you! I shall find lots of work to do and will be a good faithful father to my darling children and a good husband, and a faithful son to father and you. I long to kiss you both again. Good bye. Your own loving son,

(Signed) H. J. B.

P. S. — Remit cable. Remit to Gertrude, she is faithful and true. I have found it out. Remit. Waiting. Help! I shriek a sane man from the madhouse. Help! Help! Help! Remit cable.

(To be continued.)

A NEW METHOD OF CLOSING THE ABDOMEN AFTER LAPAROTOMY.*

BY FRANK A. HIGGINS, M.D., BOSTON.

ACCORDING to our present customs the ideal closure of the abdominal wall after laparotomy would seem to be attained by a method of careful approximation and suture of each individual layer by fine, absorbable and perfectly sterilizable suture material, which could be inserted without the necessity of tying knots, and without the necessity of perforating the skin by sutures. The ideal method of closure would also obliterate all so-called dead spaces and be able to prevent all fluid accumulations within the layers.

Skin sutures, knots, permanent suture material of all kinds, absorbable sutures which cannot always be perfectly sterilized, and dead spaces allowing fluid accumulation within the layers of the abdominal wall are the chief difficulties, aside from septic material introduced at the operation, which interfere with obtaining perfect results, and are the questions which confront one in attempting to decide the best way in which to perform the work.

Many methods have been proposed and used for the closure of the abdominal wound — so many, in fact, that it would seem almost impossible to devise another possessing merit. This is very likely so, but still it is not probable that the last word has been said on this any more than on any other subject connected with surgery. New methods will undoubtedly be evolved in the future, and very probably new materials for suture superior to anything we know of at present. With some of the present methods of suture of the abdominal wall the results, both temporary and permanent, are almost ideal in many of the cases. It seems evident, then, that any further advance must be directed towards the improvement of the technic and to the devotion of more careful attention to details.

There are practically only two methods of abdominal suture, the mass or through-and-through suture and the layer or tire suture, all others being essentially modifications of one or the other of these two. Each method has its advocates, but the superiority of the layer method in most cases is becoming generally evident to surgeons and writers. It is not my intention to review or discuss at length the question of the different methods of closure of the abdominal wall after operation, or to argue for or against any particular method, any more than may be necessary to point out and demonstrate the feasibility and advantages of the modification which I suggest.

The layer suture is generally regarded as the nearest approach which we can attain to the natural conditions existing before operation. This, with some combination of the mass suture, probably offers the strongest barrier possible to hernia and to infection through accumulation of fluid within the walls, and this modification has been adopted as a satisfactory compromise by a number of surgeons. The tier suture is chiefly objected to because of the danger of the so-called dead spaces and the time necessary for its use. The extra time is not usually an important factor, as the anesthetic may generally be omitted as soon as the peritoneal suture is begun, and the whole wound is commonly closed before the patient makes any disturbing efforts to move. In the comparatively few cases in which the shock is a vital element then technic has to be abandoned and every attention given to rapidity, and the mass suture becomes necessary.

The second objection raised against the layer suture is that it leaves at least two dead spaces, and under these circumstances a wound is likely to become filled with blood. The longer the wound, the greater this danger. That there is greater liability of infection taking place when dead spaces are present is also generally admitted. These objections are undoubtedly important ones.

Of course if any source for septic infection has been introduced or left in the abdominal wall, the exercise of pressure by the mass suture will not eliminate it. Yet the abscess in the abdominal wall generally arises from the infection of fluid accumulations of blood and lymph, by the less virulent forms of bacteria from the skin. If these fluid accumulations are prevented, the bacteria, present only in limited quantities, do not find the most favorable soil for development and are usually eliminated without giving rise to trouble.

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Permanent suture material in the abdominal wall seems in general to be undesirable because so many cases have occurred in which it has caused irritation and eventually required removal. Probably the constant strain and tension on the abdominal wall and the frequent contraction of the abdominal muscles have more or less to do with the irritation caused by permanent foreign material in this particular part of the body.

Sutures of absorbable animal material such as catgut, of the sterilization of which we can never be perfectly sure, are never used by many men, but the choice for the present at least must lie between this and non-absorbable sutures. I have always used fine catgut, and have never had bad results which could be attributed directly to it, and therefore I shall probably continue its use until some more favorable absorbable suture is developed.

The objections to sutures passed through the skin are well known. They arise from the cutting and irritation which they cause and from the presence of the skin micrococci. If the sutures are passed from within outwards and the metal guard I propose is used, these difficulties become practically nil.

Knots, which are often of considerable size, to be secure against untying, seem to me to be occasionally a source of irritation in the abdominal wall. This occurs especially in thin patients and at the lower end of the incision where the fascial suture is tied and the knot becomes practically subcutaneous. Occasionally as late as two or three weeks after operation a wound will open a little at this point without suppuration after primary union has apparently taken place. This is not a serious condition, but it is annoying, and is often rather slow in healing. I know of no way of accounting for it except on the theory that the knot in the fascial suture, which is just beneath the skin in these cases, causes irritation. The method recently proposed of suturing the fascia with a removable silkworm gut suture might obviate this difficulty. I have not used this method, because this suture must be removed within two weeks, and it seems desirable to me to have a suture in the fascia which will remain about three weeks.

There are three important considerations to be kept constantly in mind in every operation, abdominal or otherwise. These are, first, the preservation of the life of the patient; second, the securing of results tending to the improvement of the patient's condition; and, third, the after results and the appearance of the patient.

With the first two conditions this paper is not concerned. Under the third arise several conditions which we may consider. The frequency of ventral hernia has been greatly diminished by the layer suture, by the avoidance of drainage, and by the securing of aseptic healing of the wound. Hernia may occur also as a direct result of fluid accumulation within the abdominal wall, causing fistulous openings and ending in secondary suppuration. The importance of the prevention of fluid accumulations in the abdominal wall has been repeatedly pointed out. It has been authoritatively stated that " nothing is more conducive to primary healing of wounds than the absolute avoidance of all oozing or accumulations of blood, which may become infected and give rise to suppuration after the wound is closed."

A judicious combination of the mass and tier suture methods of closing the abdominal wall undoubtedly overcomes the most serious disadvantages of either method used alone. The through-and-through suture itself, as used at present, has never proved very satisfactory as I have seen it used by others or in my own work. Trouble frequently arises from the fact that these sutures have to be tied tightly in order to bring the layers and the skin together. After the first few days these stitches begin to cause considerable redness around the sutures where they penetrate the skin; and where they cross the wound they cut through the skin and not infrequently give rise to suppuration and to stitch abscesses. Further infection ensues unless at this time the irritating sutures are cut and removed, and then a weak corrosive dressing is necessary to check the inflammation just starting up. These through-and-through sutures of silkworm gut, which are almost sure to cut through the skin more or less as described, give rise to additional scars on the abdomen, which later are often seen as welts from one-quarter to one-half inch in length running at right angles to the direction of the wound. The early removal of these through-and-through sutures is apt to end in some separation of the edges of the wound, entailing delayed union and a wider scar.

Some surgeons deny that the appearance of the wound after healing is of any importance, and do not take into consideration at all the looks of the resulting scar. If the functional result is good that is all that is necessary, claiming that whatever the appearance of the scar may be, it does not matter to the patient. I believe that this is true to a certain extent with a certain number of patients. With other patients I have found that the idea of having any abdominal scar is very objectionable, and of such importance does it appear to them that they will not consent to have any abdominal operation performed except under urgent indications. I have known operations put off for this reason only, even when there has been actual pelvic pain. It is also true that many patients do not inquire or think about these things in connection with an operation. I have also heard patients criticise the work done at certain hospitals and by certain surgeons because some friend who had been operated upon by another man had a narrower and shorter scar. This may be a comparatively small matter which the older surgeon with a widely established reputation does not need to consider in his work. Very likely also he does not have to answer the questions that are propounded to the younger man, and, moreover, his results are more likely to be taken without question than are those of the young surgeon.

Very small incidents are often known to exert great influence, in matters of much importance, for the good or for the detriment of a man. Especially is this apt to be true at the beginning of a man's career. I believe that at all times the abdomen after operation should be left in as good a condition as possible with regard to both strength and looks, and that in the long run, other things being equal, the man who does this and who pays careful attention to details will be the more successful and obtain the best results.

The question then arises: how can the factors which prevent the rapid and uncomplicated healing of the abdominal wound best be prevented? In the writer's opinion, by the use of the tier suture in combination with the mass suture, by the introduction of mass sutures in such a manner that they cannot irritate and cut through the skin, and by the exercise of suitable counter-pressure along the whole length of the incision in the abdominal wall. Dead spaces have not heretofore been thoroughly overcome by the mass suture unless these sutures are put in much closer than has been customary in the writer's observation. As used, however, they have sufficed for all practical purposes in the great majority of cases.

Some two years ago the writer, who has always believed in the tier suture, became convinced of its disadvantages from the results in some cases of his own, and attempted to overcome the possibility of fluid accumulations in the abdominal walls by a modification of the mass suture. This modification had never been tried elsewhere so far as I am aware; at least, though I have not made an extensive search of the literature, I had never seen it suggested. It consisted in passing several mass sutures of fine catgut — No. 1 chromicized, preferably, because of its strength and lasting qualities — through the various layers of the abdomen, from the peritoneum outward to, but not through, the skin. This constituted a buried mass suture of absorbable material, which included all the structures in the abdominal wall except the skin. The peritoneum and fascia were sutured with running catgut suture before these mass sutures were tied. After these were tied the skin was sutured in the usual way. This method was abandoned, although no trouble whatsoever was experienced from its use in the few cases in which it was tried. The chief reasons why this method of introducing the mass suture was given up were that the knots in the mass sutures came just beneath the surface of the skin, and I feared would in many cases cause sufficient irritation to interfere with union. In addition, I did not like the idea of leaving any more suture material than was absolutely necessary to be absorbed by the tissues in the abdominal wall. This modification possessed the attractive feature of having absolutely no penetrating sutures in the skin, provided the subcuticular suture was used; but its disadvantages seemed to outweigh its good points.

More recently I have again been devoting considerable attention to the subject of the abdominal suture and the obliteration of dead spaces, which I believe it is unwise to neglect. The mass suture as at present generally used is unsatisfactory, because it cuts through the skin and gives rise to redness, to irritation and to scars. It frequently results in stitch abscesses, and on this account often has to be removed before the union has become firm.

Granted that the mass sutures are necessary, it has always seemed to me that the desideratum is proper and effective counter-pressure against these sutures. The idea of a narrow metal plate with perforations, as shown in Figure 1, first occurred to me. This plate in actual practice was abandoned because it was found that, unless the sutures were put in with considerable care and at the expenditure of more time than was desirable, they were not likely to come opposite the perforations in the plate. The same metal plate with serrations in the edges, as shown in Figure 2, was also abandoned for much the same reasons. In using this plate, however, it was found that it did not matter where, along its edges, the sutures were tied. They held equally well wherever placed, and there was no opportunity for the plate to slip either way. Consequently the metal strip with straight parallel edges, Figure 3, has since been used. The plate is a strip of thin, nickel-plated copper about one-

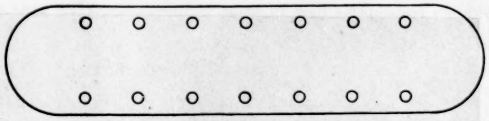


Fig. 1.

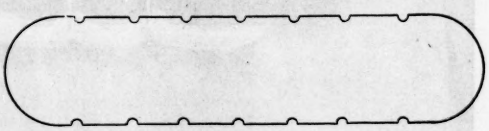


Fig. 2.

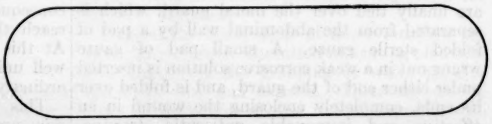


Fig. 3.

thirtieth of an inch thick. It is stiff enough not to be bent by the sutures, but is easily bent by the fingers in case it needs to be adjusted to any inequalities in the surface of the abdomen.

I will state briefly the method by which it seems to me best to close the abdominal wound after laparotomy. The mass sutures of silkworm gut are introduced by double-threaded large curved needles. One suture is placed at either end of the wound, and one or more between, depending upon the length of the wound, fewer being needed than without the metal guard. The ends of these mass sutures are clamped and held on either side by heavy clamps which by their weight hold the sutures tight and prevent any danger of the intestine or omentum slipping beneath them. The peritoneum is then closed by a running suture of fine unchromicized catgut, the fascia by fine twenty-day chromicized gut, and the skin with a subcuticular suture of fine silkworm gut or horse-hair. The mass sutures are finally tied over the metal guard, which is separated from the abdominal wall by a pad of folded sterile gauze. A small pad of gauze wrung out in a weak corrosive solution is inserted under either end of the guard, and is folded over its ends, completely enclosing the wound in an effective and immovable antiseptic dressing. This acts effectually as a barrier to any outside infection, while nothing but sterile gauze comes in contact with the surface of the wound. Figure 4 shows the metal guard in place, with the mass sutures tied and the antiseptic gauze at the top and bottom ready to fold over. The outer dressing need then be only a comparatively small one. Usually on the fifth day after operation the first dressing is done, and the mass sutures, having performed their function, are cut. They are not removed till the day following. Subsequent dressings are repeated every second or third day, and the subcuticular skin suture is removed in from ten to fourteen days. The mass sutures, having merely perforated the skin for a short time, leave no permanent scar.

The through-and-through sutures should not be tied under more tension than one would use without the metal guard. In this way the circulation is not interfered with, the vitality of the tissues is not lowered, and there is no cutting through of the sutures, at least on the surface. The gauze beneath the metal guard is of advantage in that it relieves the skin from direct pressure of the metal, and that it absorbs the slight amount of blood from the skin and whatever may be expressed by the counter-pressure. In addition, the metal guard holds the dressing absolutely in place without adhesive straps, and consequently no outside source of infection can reach the wound until after its first dressing. At this time the wound should be sufficiently well united to insure it against infection under ordinary conditions.

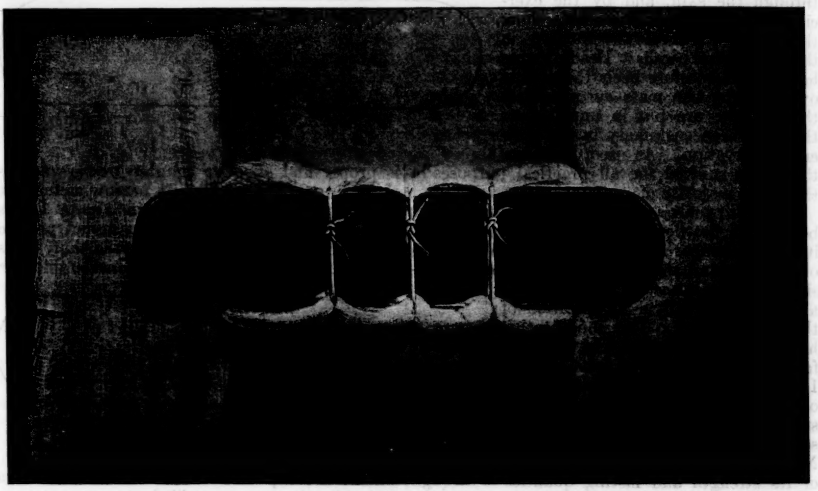


Fig. 4.

This modification which I propose, and have now used for a number of months with great improvement in my results, may at first appear unnecessary and cumbersome, but in actual practice it does seem to possess decided advantages. In the first place, it in no way interferes with the perfect and aseptic healing of the wound. It eliminates the chief objections to the layer suture without increasing materially the time needed for closure. It effectually controls all

oozing of blood and serum into the wound, so that it becomes rarely necessary to ligate any of the vessels. The accumulation of all collections of blood within the layers of the abdominal wall is thereby prevented. Stitch and other forms of abscesses become practically eliminated. With its use several advantages in its favor have appeared which were not apparent or expected at its conception. One is that the pressure of the metal guard promotes adhesion between the layers in the abdominal wall, and a distinct non-inflammatory induration may be felt running along on either side parallel with the edges of the wound. This, I believe, tends to the formation of a firmer and stronger cicatrix than any other method yet proposed. It also tends to prevent stretching apart of the edges of the skin, and results in a linear scar.

The writer, in conclusion, would say that he does not so much regard this as a new method of abdominal suture, as he does that it is another step in the technic of the closure of the abdominal wound, and one by which many of the disadvantages of the layer and the mass sutures may be overcome. It requires very little extra time for its application, it promotes union, and it gives additional strength and improved appearance to the abdominal wall. I do not expect its advantages to be appreciated without a trial, but I do believe, from my own experience, that after a fair trial others will be convinced that it has certain advantages in many cases.

Since this paper was begun the writer has been trying, in place of the metal shield, transparent plates of celluloid or pyrolin. With plates of this material, pads of sterile gauze are placed alongside either edge of the wound, but do not press directly upon the surface of the wound itself. Glass plates might be used in the same way.

This method possesses the attractive feature that the outer dressing may be removed daily if desired, and the healing observed without being obliged to disturb or dress the wound. The writer would merely mention this latter device as a suggestion here. He does not intend at the present time to advocate its permanent use without more extended trial.

ALBUMINURIC RETINITIS.[1]

BY ALLEN GREENWOOD, M.D., BOSTON,

Ophthalmic Surgeon to the Boston City Hospital.

It is well known that frequently the presence of an optic neuritis will lead to the discovery of a previously unsuspected cerebral tumor, but it is even more frequent that the presence of a characteristic retinitis will lead to a diagnosis of chronic nephritis, in cases where renal disease was previously unsuspected. It is the frequent experience of every oculist to find in patients whose only complaint is a dimness of vision, the ophthalmoscopic picture of albuminuric retinitis, resulting in the diagnosis of a fatal renal disease. Out of 26 cases I have seen in private practice, in only 5 was there any previous knowledge of kidney disease. It is in relation to the prognosis of such cases, however, that albuminuric retinitis is of the greatest aid; a prognosis, indeed, than which there is scarcely any more certain. By a very brief ophthalmoscopic examination, a diagnosis and prognosis may often be given which seem little short of miraculous to the friends and physician of the patient. That the possibilities of diagnosis are apparent to laymen as well to physicians is evidenced by the experience which probably happens to all oculists of having patients present themselves with the request that their eyes be examined to see if they show anything indicating kidney disease. Physicians certainly appreciate the prognostic importance of this condition, for I have many times been called in consultation in cases of well established chronic nephritis to see if the ophthalmoscope would aid in the prognosis. It is well known that the prognosis as to the length of life in most cases of chronic nephritis without retinal complications is very uncertain, while with them there is a certainty such as is established in but few chronic diseases.

The ophthalmoscopic appearances of albuminuric retinitis are so well known and described in all the modern textbooks that I will only mention them in part and very briefly. In Norris and Oliver seven forms are spoken of as capable of differentiation, viz.:

(1) Typical albuminuric retinitis.
(2) Degenerative albuminuric retinitis.
(3) Hemorrhagic albuminuric retinitis.
(4) Albuminuric chorio-retinitis.
(5) Albuminuric neuro-retinitis.
(6) Albuminuric papillitis.
(7) Saturnine retinitis.

In actual practice these various forms merge into each other, and often a number may be nearly equally prominent, so as to make it impossible in many cases to name the variety. After having watched several cases from nearly the beginning to the end, one is inclined to consider that many of the so-called forms are but stages in this inflammatory and degenerative disease of the retina, choroid and nerve. In some cases and in some stages one or more of the pathological conditions predominates, hence the different varieties.

Besides the usual signs of neuro-retinitis, the most characteristic alteration indicating albuminuric retinitis is the grouping of white patches about the disc and macula. These are due to fatty degeneration of the retinal elements and exudates, and vary much in size and shape. In the macula region they often run together, forming lines radiating out from the fovea like star points with lines of pigment deposit between. In some cases of albuminuric retinitis they are absent, and there may be only a few hemorrhages or a papillitis to suggest the correct diagnosis, the papillitis in rare cases amounting to a choked disc, so that in every case of retinitis or neuritis

the urine should be examined. The retinitis is almost invariably bilateral sooner or later, though usually more advanced in one eye. It is, I think, generally conceded that the pathological conditions are due to degenerative changes in the blood vessels of the retina, choroid and nerve, resulting in the inflammations, hemorrhages, exudates and degenerations which go to make up the usual ophthalmoscopic picture. These vascular changes are in some cases largely a part of a general arterial degeneration, and in others largely the result of slow uremic poisoning. The latest researches into the microscopical changes show an even greater involvement of the vessels of the choroid than those of the retina, and it has certainly been my experience to find extensive choroidal changes in quite a number of cases. I find that several times lately I have made the diagnosis of albuminuric chorio-retinitis where there has been extensive choroidal change with destruction of the choroid and laying bare of the sclera with the surrounding embankments of pigment.

After seeing a few cases of albuminuric retinitis, I found myself grouping them in two distinct classes based, not on retinal differences, but on the supposed primary pathological conditions which cause the chorio-retinal changes. The cases here reported illustrate this very well. The first group of cases include those where the endarteritis of the chorio-retinal vessels, with its consequent changes in the choroid and retina, is largely a part of a general arterial degeneration of which the chronic interstitial nephritis is also only a part. These cases occur in the old and middle-aged where the whole vascular system has become more or less subject to degenerative changes, from age as well as from impure blood, and the involvement of the chorio-retinal vessels only shows an advanced stage of a degenerative condition, which has existed for some time, and which almost invariably advances to a fatal issue. Death usually results from extensive kidney impairment causing uremia, or else one of the arterioles in the brain more diseased than its fellows, yielding to that increased blood pressure which comes with cardiac hypertrophy, causes a fatal hemorrhage. In these cases the chorio-retinal degeneration is less extensive and often the vascular disease in the choroid and retina causes visible pathological changes before the vascular disease in the kidney has advanced enough to produce a constant albuminuria, as shown in the first and eleventh cases of this group. The prognosis as to length of life is a little better than in the second group.

The second group includes those cases which are more correctly designated as cases of retinitis albuminurica, from the fact that they are directly caused by uremic poisoning of the blood from a distinctly demonstrable acute or chronic lesion of the kidney, usually of a parenchymatous or diffuse type. They occur mostly in youth and early adult life, showing a greater retinal destruction with consequent greater impairment of vision, and the prognosis is extremely bad in all but those resulting from the acute nephritis of scarlet fever and pregnancy. It is in the prognosis of both classes of cases of chronic nephritis associated with albuminuric retinitis that I wish to interest you particularly.

Regarding the length of life after the discovery of the retinitis, the following may help. Baroness Possaner found the following from the cases taken from 67,000 cases from the Zurich clinic and private practice of Professor Haab:

Men	from the poorer classes all died in two years.							
Women	„	„	„	„	68%	„	„	„
Men	„	„	better	„	59%	„	„	„
Women	„	„	„	„	53%	„	„	„

The longest period in the poorer class was six years, and in the better class, eleven years.

In a report by Bell at the Ophthalmological section of the American Medical Association, 100 cases collected from the private practice of various ophthalmologists are given, and of these 73% died in one year and 94% in two years.

Rogers collected 419 reported cases which included those of Possaner and Belt, and of these 90% died within two years.

In my private practice in the past twelve years I have seen 26 cases, and am able to report the subsequent condition of all but two. Of the 26 there are six living to-day, but none of these was seen prior to three years ago. Of the 20 who have died only two lived over three years. I shall only give a brief history of the two or three most interesting cases and a synopsis of the others.

GROUP I.

1. Miss E., aged forty-two, called on account of failing vision Dec. 18, 1891.

O. D. V. = 20–70. O. S. V. = 20–20.

O. D. well-marked neuro-retinitis, with numerous flame-like hemorrhages and spots of exudate. There was a large irregular patch of degeneration at the macula involving the choroid, with consequent embankment of pigment.

O. S. Slight neuro-retinitis with a few hemorrhages and spots of exudate about disc. Macula not involved.

Examination of urine showed specific gravity 1,012, and only the most minute trace of albumin. Three casts in 8 slides. Chronic interstitial nephritis. Examination a few days later by an expert chemist, who reported that no albumin or casts were present. A few months later, however, albumin and casts were easily found.

March 17, 1892, O. D. V. = 20–200. O. S. = 20–70 more spots of exudate and degeneration. Patient died August, 1893, from uremic poisoning, a few months after a cerebral hemorrhage, one year and eight months from time of my first seeing her.

2. Mrs. F., Natick, age fifty-five. Seen March 14, 1892. Retinitis with hemorrhages and exudates. No subsequent history obtainable. Urine — chronic interstitial nephritis.

3. Mrs. F., aged seventy. Seen Nov. 3, 1897. Had had a cerebral hemorrhage a few weeks previously with hemiplegia and hemianopsia. Fundi showed neuro-retinitis with flame-like hemorrhages and spots of exudate. Chronic interstitial nephritis. Died March 27, 1900. Lived two years four and one-half months.

4. Mr. C. O. L., age sixty. Seen Jan. 6, 1898. Neuro-retinitis with exudates. Urine—chronic interstitial nephritis. Died Nov. 6, 1899. Lived one year and two months.

5. Mrs. H. W. P., age seventy-three. Seen April 11, 1897. Albuminuric retinitis. Chronic interstitial nephritis. Died comatose Oct. 5, 1899. Lived two years and six months.

6. Mrs. R. H., age sixty-seven. Seen July 12, 1897. Neuro-retinitis, with exudates about the maculæ. Urine

— chronic interstitial nephritis. Died Dec. 5, 1897. Lived six months.

7. Mrs. M. B., age fifty-five. Seen July 30, 1897. Simply exudates about maculæ. Urine — chronic interstitial nephritis. Died March 8, 1900. Lived two years eight and one-half months.

8. Mrs. F., age thirty-five. Seen Jan. 15, 1896. Fundi show chorio-retinitis with a few hemorrhages and spots of exudate and degeneration. Chronic interstitial nephritis. Died March 14, 1900. Lived four years and two months.

9. Mrs. F., age fifty. Seen June 3, 1898. O. U. show a few scattered hemorrhages, and a few spots of exudate about maculæ, chronic interstitial nephritis. Died of cerebral hemorrhage, Aug. 11, 1900. Lived two years one month eleven days.

10. Mr. L. W., age eighty. Seen April 11, 1896, on which date I removed a cataract. The resulting vision being poor, I examined the fundus, finding albuminuric retinitis. The family physician found advanced chronic interstitial nephritis. The patient died Sept. 28, 1897, living one year and five months.

11. Mrs. W., age fifty. Seen June 12, 1896. Had neuro-retinitis, with abundant hemorrhages and spots of exudate. The family physician reported urine normal to the family, but in a year she developed chronic interstitial nephritis, and died in convulsions one year and six months after I saw her.

12. Mrs. H., age seventy. Seen July 6, 1894. Albuminuric retinitis, complicating incipient cataract. Urine of chronic interstitial nephritis. Died twelve months later.

13. Mr. T., age seventy-five. Seen Nov. 14, 1897. Fundi showed haziness of disc outlines, and in the region between the discs and maculæ were many small round spots of yellowish-white exudate. No hemorrhages or degenerations. The family physician reported ½% of albumin and existence of chronic interstitial nephritis. Died Feb. 26, 1898. Lived three and one-half months.

14. Mrs. S., age fifty-six. Seen July 12, 1902. Complained of dim vision and not being able to get glasses to help her. V. o. u. 20–200; incipient cataract o. s. Fundi showed neuro-retinitis with exudates about maculæ and one hemorrhage below right disc. Urine shows chronic interstitial nephritis. Died Nov. 12, 1902. Lived four months.

Added to this group are the following cases still living:

15. Mrs. P., age sixty-one. Seen July 26, 1900. Her family physician had discovered albuminuria from chronic interstitial nephritis, and sent her to me for help in prognosis. Neuro-retinitis with spots of exudate. No hemorrhages. Is still living two and one-half years after.

16. Mr. C., age sixty-seven. Seen Feb. 16, 1901. Has incipient cataract and neuro-retinitis, with hemorrhages. Chronic interstitial nephritis. Still living one year and eleven months after.

GROUP II.

1. Susie W., age sixteen. Seen Nov. 15, 1893. Seamstress; came for failing vision. Degenerative chorio-retinitis. No hemorrhages. Vision much reduced. No papillitis. Maculæ involved. Chronic diffuse nephritis. Died April 6, 1898, from uremic coma. Lived four years and seven months.

2. Miss G., age twenty-six. Seen Sept. 21, 1894. Watchmaker, came for failing vision. Degenerative chorio-retinitis o. u. Macula involved o. u. No papillitis or hemorrhages. Diffuse nephritis. Died Oct. 22, 1894, in uremic coma. Lived one month.

3. E. L., age sixteen. Seen April 12, 1899. Came for failing vision. Had to leave her work several weeks ago on account of poor eyesight. O. D. V. = fingers at two feet. O. S. V. = 20–100. O. U. the fundi show a large amount of whitish exudate about the disc, covering the edge and burying the blood vessels in places. Throughout the retina were numerous white spots of exudate. In the macula region O. D. there was the star appearance of radiating lines of degeneration with intervening lines of pigment deposits with a heap of pigment in the centre of the macula. No hemorrhages. In O. S. the same condition involving only half of the macula region. Chronic diffuse nephritis with urine solid on boiling. Died in uremic coma April 19, 1900. Lived one year seven days.

4. Miss P., age twenty-two. Seen July 6, 1893. Worked in watch factory till six months before. O. U. showed chronic retinitis with complete destruction of retina and choroid over large areas including the maculæ. Gray atrophy of optic nerves with arteries reduced to mere threads. No perception of light. Had uremic convulsions every day or two, and died in one six weeks later. Chronic diffuse nephritis, urine solid on boiling.

5. J. W. H., age thirty-four. His physician had diagnosed chronic diffuse nephritis. Two and one half years ago feet and legs began to swell. Six months ago his sight began to fail in left eye; right eye blind from injury. Seen May 1, 1901. Left eye showed a neuro-retinitis. The neuritis was so marked that the disc could not be seen. Region about disc and macula occupied by exudate. Few small hemorrhages. His physician informed that death would probably occur inside of a year. Died of uremic poisoning Nov. 29, 1901. Lived about seven months.

6. A. H., age thirty. Came to my office Aug. 27, 1901, for failing sight in both eyes, particularly the right one. Was not aware of any other physical disability. O. D. V. = 20–400. D. S. V. = 20–30. O. U. neuro-retinitis with hemorrhages about discs. Exudates and degenerations about maculæ. Urine showed chronic diffuse nephritis with ½% albumin. Died in New York, Nov. 19, 1901. Lived about three months.

Added to this group are the following cases still living or unheard from:

7. W. W., age twenty-two. Seen July 20, 1900. Complained of failing vision only. O. U. V. = 20–200. Fundi showed neuro-retinitis with exudates; and degenerations. His physician reported chronic parenchymatous nephritis. Left town soon after and I have been unable to trace him.

8. F., age twenty-six. Seen Aug. 7, 1900. Sent by his physician for help in prognosis, as he had a chronic diffuse nephritis. O. U. had well-marked neuro-retinitis with hemorrhages and exudates. The last report from him was to the effect that he had failed so much that he was obliged to give up all work.

To these should be added cases nine and ten of this group, which were cases of acute nephritis from pregnancy with complete recovery of the eyes and kidneys.

My cases are too few to deduct percentages from, but the following may be noted: Out of the sixteen cases of the first group, of one I have no subsequent history; four died within one year, four within two years and four within three years. Only one lived over three years, death coming in four years and two months. Of the two living neither dates back over two and one-half years.

Out of the ten cases of the second group, of one I have no subsequent history; four died within eight months; one died within two years; one died after four years and seven months: one was known to be alive two and one-half years after first being seen. The two cases occurring from pregnancy have recovered entirely.

From these cases and the many others of different observers, it is plain that the prognosis afforded by the discovery of albuminuric retinitis in cases of chronic kidney diseases is very grave, and that life is but rarely prolonged more than three years. It has been noticed that cases occurring in the better classes live the longest as a result of better hygienic surroundings and care. I feel sure that as we learn more about the body metabolism in such cases, and can give them the best diet and hygienic treatment, we shall

be able to retard the progressive decline, and materially lengthen life. How much capsulotomy may do in these cases will be told in the future. I realize that my clinical grouping of these cases is open to criticism, but I hope, in the near future, by post mortems and microscopical examinations to prove the grouping correct pathologically.

AS TO POPE LEO'S CASE — PLEURO-PNEUMONIA.

BY SAMUEL DELANO, M.D., BOSTON.

Now that Italy has poured a broadside into the diagnosis of the late Pope's case, the time may seem opportune for letting go with some guns of our own. It might be worth while, if merely for general principles' sake, to submit the diagnosis to the test of inherent probability; because general reasoning in a large percentage of cases furnishes so good a guide to follow. It must, however, be conceded that in a given instance this would not coincide with legitimate criticism, because one well-observed fact might show your most careful logic to be a non-sequitur.

Nevertheless it seems highly improbable that fibrinous pneumonia should be at work in an old man of ninety-three, sick some days before medical aid was summoned, lingering on some weeks, while in that time he could be up and dressed and give many audiences; with a temperature ranging irregularly over the lower fever scale, a respiration for much of the time in the neighborhood of 25 and the pulse around 85.

Inadequate as these items might seem, however, we should still have to keep silence, if only on the principle that in medical diagnosis the looker-on does *not* get the best of the game, had not there been a fatal flaw in the autopsy. Here, certainly, allegiance must waver, for, advancing a pathological diagnosis of gray hepatization of the lower lobe, this is made to rest upon the statement in the commentary that " from the cut surface an abundant dirty white fluid without gas oozed out, *showing complete hepatization.*" Of course, as a matter of fact, nothing could be much drier than the cut surface of gray hepatized lung and we thus not only have to do with an absolute inconsistency of statement, but the description fits no stage of pneumonia, — on the contrary comes very much closer to an edema in a compressed lung.

Yet the paramount reason for taking exception to the diagnosis of pneumonia in the Pope's case is that pleuritic effusion in sufficient quantity to aspirate is next to never associated with fibrinous pneumonia. And this furnishes the real object of this communication as well as the moral that the case points. That this is not the prevailing view and that clinical evidence might be put forward to the contrary, I am well aware, but my firm belief is that owing to a confusion of physical signs a great deal of error has crept into our conceptions. The point has obviously an important practical bearing, inasmuch as the prognosis and treatment of effusion and pneumonia are quite antipodal and because the early detection of fluid is necessary to a wise supervision.

To begin at the end, viz., the autopsy, that great controller of clinical observation,— autopsy findings offer next to no support to the idea of effusion combining with pneumonia; that is to say, personal observation of a goodly number of autopsies and a considerable search of records confirm the principle that pneumonia is not associated with effusion sufficient to influence the physical signs or yield on tapping; a teacupful of fluid there may be, perhaps, but this is no more than the agony or gravity would account for.

This fact if confirmed, would indicate at least that the tendency of pneumonia was not towards the establishing of effusion and it would only remain to determine how far the trend may be influenced by a prolongation of the case or by recovery.

How then account for the impression prevailing that many cases come in as pneumonia and end up with simple effusion or empyema? It goes back to nothing except the perversion and consequent confusion of physical signs. I leave out of account the rational signs which in these cases, especially of empyema, might cut a considerable figure in correcting the error.

The crux of the matter is that pleuritic effusion commencing as such idiopathically may in a certain good percentage of cases be characterized by a bronchial or sniffling respiration that easily passes for the respiration originating in solidified lung. The sophistication is especially apt to be the more successful because it is in very moderate effusions that the most suspicious signs occur, while towards the top of the fluid the sniffling respiration and the voice sounds of like character may be very near the ear. The discrimination may be a delicate task, but into that it is not my purpose to enter. Finally, if the chest fills up we may have a blowing respiration over the whole chest, the sound, however, being fuller and more amphoric than in the case of the smaller amounts.

In my experience empyema is especially apt to include the bronchial element in its signs and that, too, from the outset. I have observed a considerable number of empyemas starting with an all-round bronchial character in the lower back, this mounting higher till extended over the whole chest. The diagnosis of pneumonia was persisted in by a number of observers. Finally, that the chest was full could no longer be denied and operation was invoked. Cases such as these are undoubtedly reported as empyemas following pneumonia, yet there was no distinct demarcation in the physical signs; furthermore, the diagnosis of effusion at the outset was made as well, and it would seem justifiably. In the writer's opinion empyemas, as a matter of fact, are much more often effusion from the start and much more rarely associated with pneumonia than supposed. In the first place, if autopsy shows the marked tendency of pneumonia away from effusion, this fact emphasizes the unreasonableness of linking empyema to pneumonia through the medium of a large serous effusion, to become purulent

secondarily. Again, to trace the empyema back to a pneumonia eventuating in gangrene or abscess, is to follow another improbable route, because such cases are so ill that death steps in ahead of the empyema. Finally, if the cases are carefully studied it will be found that *quoad* pneumonia these empyema cases with bronchial signs are defective in the matter of rational signs, there being often nothing in that province to substantiate a pneumonia diagnosis, while, most important of all, the original physical signs did not correspond with the limits of a lobe.

What happened in the Pope's case seems then to have been this: Examining the patient, his physicians find as they reported bronchial signs over a limited area in the back (designated by ribs, but I have forgotten which) corresponding to the upper part of the lower lobe; as the basis of this a diagnosis of lobar pneumonia is made — in reality the signs with much more probability coincided with the upper limits of an effusion. In a few days convincing themselves that there was fluid, they tap and get a couple of pints. The diagnosis then expands into pleuro-pneumonia — pneumonia plus effusion. At the autopsy some weeks later the lung is reported still in a state of gray hepatization, notwithstanding its fluidity, *mirabile dictu !*

So then it seems within the bounds of probability to say that the Pope had no pneumonia, but only effusion, and let us trust we shall not be making the same mistake in the same way, because the trap is very often set. As to whether the effusion was of simple, tubercular or cancerous origin, we may leave his physicians and Professor Cardiarelli to thrash out.

Clinical Department.

RUPTURE OF THE TENDON OF THE EXTENSOR LONGUS POLLICIS; TENDON TRANSPLANTATION.

BY C. L. SCUDDER, M.D., AND W. E. PAUL, M.D., BOSTON.

UNCOMPLICATED rupture of a long tendon of the hand is rare. The following instance of a complete transverse tear of the left extensor longus pollicis tendon at a short distance from the muscle insertion is recorded both on account of its uniqueness and because the functional loss in this case was difficult to interpret. Moreover, a demonstration is furnished by such a case of the great value to the hand of the extensor longus pollicis muscle. It seems to us from a consideration of the following case that an understanding of the function of the thumb muscles is difficult:

Miss A., fifty-eight years old, a cook, fell in such a way as to strike the back of the left hand on the edge of a stone step. The bruised skin was treated with domestic remedies. There was some tenderness near the proximal end of the first metacarpal bone, and in dressing herself some pain was felt at that place, though there was no marked localized swelling. Three weeks later she was feeling practically well as far as the hand was concerned. One morning, in her work, she was kneeling on the floor and rested on her left elbow. No unusual feeling or event was noted, but after rising from the floor and attempting to take hold of a chair, the left thumb could not be used as before, and the thumb was flexed in the palm.

She was examined the next day and the movements of the thumb were found impaired as follows: extension of the proximal phalanx was practically absent so that the thumb was invariably closed upon by the flexed fingers in grasping movements. Feeble extension of the distal phalanx was readily and repeatedly performed. All movements of the metacarpal bone of the thumb were executed, though extension and abduction were of less range than on the sound side. There was no tenderness near the points of insertion of tendons over the phalanges; and no indication of the site of the rupture existed beyond the assertion of the patient that some tenderness on using the hand existed near the proximal end of the metacarpal bone on the dorsum.

The lesion was regarded as probably a rupture of the extensor brevis pollicis tendon near its insertion, without local signs of rupture at the seat of the tear.

Operation six weeks after the functional loss disclosed a rupture of the extensor longus pollicis tendon near to the lowest point of the muscular insertion, about opposite the proximal end of the metacarpal bone of the thumb. The sheath of the tendon was intact. A careful dissection along the wrist was necessary to find the retracted muscular belly which was some 6 or 7 cm. from the distal end of the torn tendon. Approximation of the ruptured ends was impracticable and the hope of uniting them was abandoned. A transplantation of the extensor longus pollicis tendon was deemed the best solution of the problem; and the tendon of the extensor carpi radialis longior was selected to receive the extensor longus pollicis tendon. This addition to the function of the radialis longior would impair the extension and radial abduction of the wrist but little and offered as good a prospect as any muscle tendon available that useful extension of the thumb might be restored.

The tendon of the radialis longior was partially cut on its radial aspect and split along its length about 3 cm. The distal fragment of the extensor longus pollicis tendon was cut transversely to secure a smooth and appropriate surface for its new attachment. Three fine silk sutures united the tendons thus prepared. Convalesence from the operation was uneventful.

The sequence of events in this case was probably the following: the blow from the stone step partially severed the extensor longus pollicis tendon without external wound. Three weeks later muscular effort completed the rupture of the tendon, with immediate loss of function. The explanation of the findings as to the altered function of the thumb after the complete rupture of the long extensor tendon is difficult if the description of actions of the extensor thumb-muscles given by most authorities is accepted. The first phalanx could not be extended; if the first phalanx, moderately flexed and abducted, was grasped by the observer the terminal phalanx could be flexed and feebly extended at will. The metacarpal bone could be extended, abducted and flexed with nearly normal range. For this patient, therefore, the extensor longus pollicis subserved almost wholly the function of extension of the first phalanx on the metacarpal bone; and the extensor control of the second phalanx was reinforced by other muscles, probably the abductor and short flexor of the thumb. The preservation of the extensor brevis pollicis, with loss of extension of the first phalanx, seems to be at variance with the usual statement of the anatomies (Gray, Quain, Poirier and Charpy, Testut.). It is likely

in our patient that the brevis functioned chiefly as an abductor of the thumb. Indeed, Gowers states that the brevis is the true abductor of the thumb, though he adds that it extends the first phalanx. If any anomaly of distribution of tendons existed, it was in no way indicated by the dissection.

In conclusion, this case gives support to the opinion that extensor longus pollicis is the more important of the extensor muscles of the thumb, and perhaps second to no single muscle of the whole hand in functional value. Moreover the extensor brevis pollicis acting alone has very feeble extensor control over the first phalanx.

Eight months after operation the function of the thumb is as follows: extension of the thumb is sufficient to permit all movements of the fingers alone, or grasping movements requiring the opposed thumb. The range of extension of the terminal phalanx is about one-third of normal; and in the proximal phalanx the last third of extreme extension is impossible. Perhaps the limit of improvement has not been reached, as the patient feels sure there is a steady gain in facility of thumb motions. This may mean that the cortical control of the thumb is gradually re-arranging itself to meet the new conditions. The results of the operation seem to be of great benefit to the individual, as the function of the thumb has, for practical uses, been restored.

Reports of Societies.

CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA.

EIGHTEENTH ANNUAL MEETING, HELD AT BALTIMORE, MD., OCT. 23 AND 24, 1903.

(Concluded from No. 23, p. 629.)

FIRST DAY, AFTERNOON SESSION.

THE DUTY OF SANITARIANS REGARDING VENEREAL DISEASES.

DR. HENRY D. HOLTON, Brattleboro, Vt., read a paper with this title. He emphasized the duty which should be recognized by sanitarians as resting upon them, of doing something to restrict the venereal diseases, which threatened society as no other communicable diseases did. The vital statistics of New York City in 1900 had a record of 31,145 cases of contagious disease, with 11,368 deaths, of which only 177 were from syphilis. Blascho claimed 150,000 syphilitics for Berlin, and the Committee of Fifteen 200,000 for New York City. To get an approximate idea of its prevalence the Prussian government requested that all physicians should report on April 30, 1900, every case of venereal disease coming under treatment. These reports proved that three quarters of a million people were afflicted yearly with venereal diseases in that country alone.

He said the foregoing statements would prove that venereal diseases stood next to tuberculosis and alcoholism, if they did not supersede them. They were permeating the very root of the population, as 15 to 20% of adult males were infected with syphilis, and about 80% of them had gonorrhea, tainting those yet unborn, maiming those born with the virus already in their blood, deteriorating the race and devitalizing the individual.

Instruction should be given in high schools and colleges, having reference to the prevention of these diseases.

Dr. Prieto, in a paper read at the International Medical Congress at Madrid, suggested the following regulations to be enacted into laws: (1) The law to declare the infection of any person with any form of venereal disease to be a crime. (2) That such crime against the person be punished by indemnification and imprisonment for a period of two years. (3) Where the offender could not indemnify the injured person by bearing the expenses of treatment and so forth, that the term of imprisonment or transportation be increased. (4) That the brothel-keepers be made to indemnify any person infected on their premises or by any of their licensed women, and in case of insolvency of the brothel-keeper, imprisonment or fine shall be enforced.

DR. HOLTON thought the rules of Prieto stringent enough to control the evil. However, to enforce them would require an enlightened and educated public sentiment of great strength. He would educate the medical profession; educate the public; follow this work by the enactment of wise laws which the educated public sentiment would insist should be thoroughly executed.

This paper was discussed by Drs. John S. Fulton, George R. Dean, G. P. Conn, Frank Wells, E. W. Cooper and Charles O. Probst. The general trend of the discussion was to educate the medical profession and the public in regard to the terrible ravages of venereal diseases and the practicability of limiting their spread by legislative enactment.

DR. PROBST then offered the following preamble and resolution, which were adopted by thr Conference:

Whereas, The great prevalence of venereal diseases, which is indirectly the cause of many deaths, is a matter of much concern to the public health; and

Whereas, The communication of these diseases to innocent persons must be largely due to ignorance, be it

Resolved, That a committee of three be appointed by the president to prepare a leaflet that would be acceptable to physicians to give to their patients, setting forth the precautions to be taken by one suffering from a venereal disease to prevent its communication to others, and to make such other suggestions as it may deem proper. Such instructions, when adopted by this Conference, to be recommended to State and Provincial Boards of Health for dissemination among the medical profession, and said committee shall report at the next meeting. (Committee unannounced.)

ANOTHER YEAR'S TEST OF THE MOSQUITO DOCTRINE OF THE TRANSMISSION OF YELLOW FEVER IN HAVANA.

Dr. John Guiteras, Havana, Cuba, said there had not been a case of yellow fever in Havana for the past two years except those that had been imported from other countries, chiefly Mexico. He then detailed the methods employed in combating this disease in Havana, which are familiar to our readers.

REPORT OF COMMITTEE ON PROMOTION OF UNIFORMITY OF REPORTS UPON VITAL STATISTICS.

This report was presented by Dr. Cressy L. Wilbur, Lansing, Mich. In the division of labor between the committee representing this Conference and the committee of the American Public Health Association, American Medical Association and others interested in the improvement of vital statistics, the special task had been selected of examining and reporting in regard to the forms of tables and general manner of presentation of statistical data employed in the annual, biennial, weekly, monthly or other reports of states and cities. In this purpose the United States Census Bureau had co-operated and had collected samples of the forms at present in use in nearly all of the registration offices of this country for the purpose of analysis and study by this committee. It was a difficult task to consider all of the forms in a comparative way, but it seemed desirable to do so before formulating a report as to the absolutely essential tables that were to be recommended for use in the various reports. The committee, therefore, reported progress and requested that additional time be granted for making a final report, which could probably be prepared before the next session of the Conference.

In addition to the work outlined above, the committee had co-operated, on behalf of the Conference, with the committees of the American Public Health Association and of the American Medical Association, the United States Census Bureau, and the Public Health and Marine Hospital Service, in the preliminary work for the co-operative study and improvement of the International Classification of causes of death, a report upon which would be presented at the session of the American Public Health Association, and also for the extension of adequate registration laws.

The report was accepted.

The following proposed national rules to govern the transportation of the dead were adopted by the Conference:

Rule 1. The transportation of bodies dead of smallpox or bubonic plague from one state, territory, district or province to another is absolutely prohibited.

Rule 2. The transportation of bodies dead of Asiatic cholera, yellow fever, typhus fever, diphtheria, membranous croup), scarlet fever (scarlatina, scarlet rash), erysipelas, glanders, anthrax or leprosy, shall not be accepted for transportation unless prepared for shipment by being thoroughly disinfected by (*a*) arterial and cavity injection with an approved disinfecting fluid; (*b*) disinfection and stopping of all orifices with absorbent cotton and (*c*) washing the body with the disinfectant, all of which must be done by an embalmer holding a certificate as such, issued by the state or provincial board of health or other state or provincial authority provided for by law.

After being disinfected as above, such body shall be enveloped in a layer of dry cotton, not less than one inch thick, completely wrapped in a sheet securely fastened and encased in an air-tight zinc, tin, copper or lead-lined coffin or iron casket, all joints and seams hermetically sealed, and all enclosed in a strong, tight wooden box. Or the body, being prepared for shipment by disinfecting and wrapping as above, may be placed in a strong coffin or casket and said coffin or casket encased in an air-tight zinc, copper, or tin-lined box, all joints and seams hermetically soldered.

For interstate transportation under this rule only embalmers holding a license issued or approved by the state or provincial board of health or other state or provincial authority provided for by law, after examination, shall be recognized as competent to prepare such bodies for shipment.

Rule 3. The bodies of those dead of typhoid fever, puerperal fever, tuberculosis, or measles may be received for transportation when prepared for shipment by arterial and cavity injection with an approved disinfecting fluid, washing the exterior of the body with the same, and enveloping the entire body with a layer of cotton not less than one inch thick, and all wrapped in a sheet securely fastened, and encased in an air-tight metallic coffin or casket, or air-tight metallic box, provided that this shall apply only to bodies which can reach their destination within thirty hours from the time of death. In all other cases such bodies shall be prepared by a licensed embalmer holding a certificate as provided for in Rule 2. When prepared by a licensed embalmer as defined and directed in Rule 2, the air-tight sealing and bandaging in cotton may be dispensed with.

Rule 4. The bodies of those dead from any cause not stated in Rules 2 and 3 may be received for transportation when encased in a sound coffin or casket and enclosed in a strong outside wooden box, provided they can reach their destination within thirty hours from the time of death. If the body cannot reach its destination within thirty hours from the time of death, it must be prepared for shipment by arterial and cavity injection with an approved disinfecting fluid, washing the exterior of the body with the same and enveloping the entire body with a layer of dry cotton not less than one inch thick and all wrapped in a sheet securely fastened, and encased in an air-tight metallic coffin or casket or an air-tight metallic box. But when the body has been prepared for shipment by being thoroughly disinfected by a licensed embalmer, as defined and directed in Rule 2, the air-tight sealing and bandaging with cotton may be dispensed with.

Rule 5. In the shipment of bodies dead from any disease named in Rule 2, such body must not be accompanied by persons or articles which have been exposed to the infection of the disease, unless certified by the health officer as having been properly disinfected.

Before selling tickets, agents should carefully examine the transit permit and note the name of the passenger in charge, and of any others proposing to accompany the body, and see that all necessary precautions have been taken to prevent the spread of the disease. The transit permit in such cases shall specifically state who is authorized by the health authorities to accompany the remains. In all cases where bodies are forwarded under Rule 2, notice must be sent by telegraph by the shipping embalmer to the health officer, or when there is no health officer to other competent authority at destination, advising the date and train on which the body may be expected.

Rule 6. Every dead body must be accompanied by a person in charge, who must be provided with a passage ticket and also present a full first-class ticket marked

"Corpse" for the transportation of the body, and a transit permit showing physician's or coroner's certificate, name of deceased, date and hour of death, age, place of death, cause of death and all other items of the standard certificate of death recommended by the American Public Health Association and adopted by the United States Census Bureau, as far as obtainable, including health officer's or registrar's permit for removal, undertaker's certificate, whether communicable or non-communicable, the point to which the body is to be shipped, and when death is caused by any of the diseases specified in Rule 2 the names of those authorized by the health authorities to accompany the body. The transit permit must be made in duplicate, and the signature of physician or coroner, health officer and undertaker must be on both the original and duplicate copies. The undertaker's certificate and paster of the original shall be detached from the transit permit and securely fastened on the end of the coffin box. All coffin boxes must be provided with at least four handles. The physician's certificate and transit permit shall be handed to the passenger in charge of the corpse. The whole duplicate copy shall be sent to the official in charge of the baggage department of the initial line, and by him to the secretary of the state or provincial board of health of the state or province from which said shipment is made.

RULE 7. When bodies are shipped by express, a transit permit, as described in Rule 6, must be made out in duplicate. The undertaker's certificate and paster of the original shall be detached from the transit permit and securely fastened on the coffin box. The physician's certificate and transit permit shall be attached to and accompany the express way-bill covering the remains and be delivered with the body at the point of destination to the person to whom it is consigned. The whole duplicate copy shall be sent by the forwarding express agent to the secretary of the state or provincial board of health of the state or province from which said shipment was made.

RULE 8. Every disinterred body, dead from any disease or cause, shall be treated as infectious or dangerous to the public health, and shall not be accepted for transportation unless said removal has been approved by the state or provincial health authorities having jurisdiction where such body is disinterred, and the consent of the health authorities of the locality to which the corpse is consigned has been first obtained; and all such disinterred remains, or the coffin or casket containing the same, must be wrapped in a woolen blanket thoroughly saturated with a 1-1000 solution of corrosive sublimate, and enclosed in a hermetically sealed soldered zinc, tin or copper-lined box. But bodies deposited in receiving vaults shall not be treated and considered the same as buried bodies, when originally prepared by a licensed embalmer as defined in Rule 2, and as directed in Rule 2 or 3 (according to the nature of the disease causing death), provided shipment takes place within thirty days from the time of death. The shipment of bodies prepared in the manner herein directed by licensed embalmers from receiving vaults may be made within thirty days from time of death without having to obtain permission from the health authorities of the locality to which the body is consigned. After thirty days the casket or coffin box containing said body must be enclosed in a hermetically soldered box.

RULE 9. All rules and parts of rules conflicting with these rules are hereby repealed.

OFFICERS.

The following officers were elected for the ensuing year: President, DR. JOHN N. HURTY, Indianapolis, Ind.; Vice-President, DR. JOHN S. FULTON, Baltimore, Md.; Secretary, DR. GARDNER T. SWARTS, Providence, R. I.; Treasurer, DR. JAMES A. EGAN, Springfield, Ill.

Time and place of next meeting were left to the officers of the Conference to decide.

Recent Literature.

Clinical Examination of the Urine and Urinary Diagnosis. A Clinical Guide for the Use of Practitioners and Students of Medicine and Surgery. By J. BERGEN OGDEN, M.D. Illustrated. *Second revised edition.* Philadelphia, New York, London: W. B. Saunders & Co. 1903.

This work falls into two parts. Part I deals with the chemistry and microscopy of the urine. After a brief description of the physical properties of the urine, the separate constituents, both normal and abnormal, are taken up, their properties described and the most approved working methods for their detection and quantitative determination given. This section contains but little which is not found in existing textbooks. At the same time the author is entitled to commendation for the care, accuracy and good judgment shown in his compilation.

In Part II special attention has been paid to the diagnosis and differential diagnosis of disturbances and diseases of the kidneys and urinary passages, the enumeration of the prominent clinical symptoms of each disease and the peculiarities of the urine in certain general diseases of the body. This to our mind is the most valuable part of the book. There is no other work in which the general subject of urinary diagnosis is presented in as satisfactory a manner as it is in this one.

This, the second edition, presents evidences of a careful revision, which brings the text well up to date. The most important changes are in connection with the determination of Urea, Uric Acid and Total Nitrogen, together with a brief mention of the subject of Cryoscopy and the addition of a section of B-Oxybutyric Acid.

We recommend the book, as a whole, as a very good one and one which will be found useful by both student and practitioner.

Practical Points in Nursing. For Nurses in Private Practice. With an Appendix containing Rules for Feeding the Sick; Recipes for Invalid Food and Beverages; Weights and Measures; Dose List; and a full Glossary of Medical Terms and Nursing Treatment. By EMILY A. M. STONEY, late Superintendent of the Training School for Nurses, Carney Hospital, South Boston, Mass. Third edition, thoroughly revised. pp. 458. Illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

The appended title sufficiently explains the scope of this book on nursing. It is a comprehensive treatise, sufficiently illustrated and excellently arranged for its purpose. We commend the wisdom which has led the writer to lay stress upon nursing in private practice. It is a matter of common observation that well-trained hospital nurses are often quite unable to cope with the exigencies and inconveniences met with in a private house. This book should go far toward rectifying this defect.

Egbert's Hygiene. A Manual of Hygiene and Sanitation. By SENECA EGBERT, M.D., Professor of Hygiene in the Medico-Chirurgical College of Philadelphia. New third edition, enlarged and thoroughly revised, in one 12mo volume of 467 pages, with 86 illustrations. Philadelphia and New York: Lea Brothers & Co.

Any work devoted to the subject of preventive medicine must necessarily require frequent revision in order that the reader may find therein the most recent as well as the most reliable information upon the topics presented. Dr. Egbert has recognized this fact in this third edition of his Manual. The work is well adapted for the purpose of a textbook for the teaching of hygiene in secondary schools and in medical colleges.

The topics treated are the following: Bacteriology, The Air, Ventilation and Heating, Water, Food, Stimulants, Personal Hygiene, School Hygiene, Disinfection, Quarantine, Sewage Removal and Disposal, Military Hygiene, Vital Statistics, The Examination of Air, Water and Food.

The book is up-to-date, convenient in size, trustworthy and practical, and may be recommended as a useful manual for the teaching of hygiene.

Das Schulzimmer. By P. JOHS. MULLER. Vol. I, No. 1. Berlin. 1903.

The most worthless trash, from a scientific point of view, are the so-called medical periodicals which constantly flood the mails, emanating from the multitude of firms engaged in the manufacture of patent medicines, patent foods, apparatus, etc.

It is therefore refreshing to open the pages of a new periodical issued by a manufacturer of school furniture and appliances and find a work devoted to the environment of the pupil while at school, treating of those topics which are essential to his health and comfort while in the schoolroom.

The illustrations are usually well made and the different topics are of a practical character. The principal article in this first number treats of the technical term known among school authorities as the " Distance," that is, the interval or space between a perpendicular line let fall from the edge of the desk, and a line let fall from the front of the seat upon which the scholar sits.

The Principles and Practice of Hydrotherapy. A Guide to the Application of Water in Disease. For Students and Practitioners of Medicine. By SIMON BARUCH, M.D. Second edition, revised and enlarged. Illustrated. New York: William Wood & Co. 1903.

Dr. Baruch stands as the chief apostle of hydrotherapy in this country. He has done much through example and precept to bring into notice this important, rational therapeutic measure. That this book has been widely read is attested by the fact that a second edition has recently appeared, in which there has been considerable revision, together with the addition of much new matter. In view of the fact that the recognition of the value of water in disease has been accepted, matter formerly required to fortify its claim has been omitted from this edition. A chapter on the principles underlying hydrotherapy in relation to recent physiological views is added, together with a chapter on insanity based upon observations made in large asylums. The appeal is again made for the greater benefits to be derived from methodical hydrotherapy and this volume, like its predecessor, gives much space to the details of treatment. Among general diseases typhoid fever receives greatest attention for sufficiently obvious reasons. We gladly commend this book to our readers, as we did its predecessor. Whatever the value or the uselessness of hypotherapeutic measures may be, it is perfectly evident that in most of our large medical centers the subject has been woefully neglected.

The Medical Record Visiting List or Physicians' Diary for 1904. New revised edition. New York: William Wood & Company.

This visiting list is well and favorably known to the profession. This new edition appears in a form similar to those which have preceded it, but shows certain changes in its contents. Among these are an increase in the amount of matter of use in emergencies, and a list of remedies and their maximum doses. The book fits conveniently into one's pocket, is attractively bound in flexible red leather and is manifestly of much practical use to the practitioner.

Physician's Pocket Account Book. By J. J. Taylor, M.D. Philadelphia: The Medical Council.

This small pocket volume is designed to be a physician's account book. It is so arranged as to permit the greatest degree of accuracy in the smallest possible space. Certain suggestions which may or may not be of use on methods of collecting bills are appended. As we said in commenting on a previous edition, the book should prove of use.

The American Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, M.D. Fourth edition. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

Dr. Dorland also presents us with the fourth edition of a pocket medical dictionary, made on the same general plan as regards binding as the larger one. It is a compact little volume, provided with a generous number of useful tables.

The Medical News Visiting List for 1904.

This is the eighteenth year of issue of this excellent Visiting List. It retains all its old good features, and has been again revised and brought up to date. Is is issued in four styles: weekly, monthly, perpetual, co-patients. Those who have used this Visiting List before will continue to do so, and there is no better recommendation for its usefulness.

THE BOSTON

Medical and Surgical Journal

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SOME REPORTS UPON FOOD INSPECTION.

IN England under the authority of the Acts relating to Food and Drug Inspection, the local authorities are authorized to appoint public analysts for the examination of such articles as are offered for sale. The number of such articles examined in 1901 was 67,481, of which 26,143 were samples of milk. Of these samples of milk, 2,938, or 11.2%, were found to be adulterated. Legal proceedings were instituted in relation to 1,839 of these and there were 1,527 convictions. The number of samples of butter examined was 11,938, of which 1,224 were adulterated. Of cheese there were 1,652 samples examined, of which only 18 were below the mark of purity. Among other articles examined there were 202 samples of condensed milk, 530 of bread, 587 of flour and 1,374 of lard.

During the first few months of work under the Food Law of North Dakota, the chemist reports upon 851 samples. The food commission presents three principles which are laid down in the laws of North Dakota:

(1) Total prohibition of harmful preservatives in food products.

(2) Prohibition of the use of coal tar dyes in all food products and beverages offered for sale.

(3) All food products must be correctly labeled, and no deception must be allowed in the wording of the label which would mislead the purchaser or consumer.

Two chapters in this report relate to the use of preservatives and of saccharin in articles of food, and the names of many firms are published who offer fraudulent articles for sale. Considering the few months since the law was enacted, excellent results appear to have been accomplished in this state.

In the Seventeenth Annual Report of the Food Commissioner of Ohio, a pamphlet of 100 pages, five pages are devoted to the work of the Commissioner and the remainder to the finances of his department. Sixty pages, or 3-5 of the entire report, are given up to an unnecessarily lengthy statement of the sums paid to a small army of lawyers for conducting cases which the state should have required its own salaried officials to do. The entire amount appropriated for this work by the State was $40,000, of which $15,000 was used for legal services.

In the remaining pages we learn that 2,048 samples of food and drugs were examined during the year, of which 698 or 34% were adulterated. Of 777 samples of milk, 144 were adulterated, and of 303 samples of oleomargarine 300, or 99%, were adulterated. Just what is meant by adulterated oleomargarine the Commission does not state. Of 98 samples of whiskey, 66 were adulterated.

In Massachusetts the work of Food and Drug Inspection has been conducted for twenty years by the State Board of Health. In its last report upon this subject, a pamphlet of 48 pages, it appears that 10,470 samples of food and drugs were examined during the year, of which 2,989, or 28.1%, did not conform to the requirements of the law relative to adulteration.

Of the number of samples of milk examined 31.1% were adulterated or below the standard. It does not follow from this statement that so large a percentage was intentionally adulterated. The Massachusetts standard of milk is exceptionally high when compared with that of other states and countries, especially in the winter. A sample of milk taken on Sept. 30, may if examined on that day be found to be considerably above the standard, but if taken on Oct. 1, may be below it. since the law only requires that it shall contain 12% of solids on Sept. 30, but 13% on Oct. 1, and from that time till March 31. The cows do not appear to be aware of this fact, and hence the high percentage of 31.1 below the standard does not represent that percentage of dishonest dealing.

Attention is called to the fact that coloring matter is not largely used in milk, the amount of samples in which it was detected in the past nine years being only 7-10 of 1%. Preservatives were also found in about 4% of samples collected in the past five years. These were mostly obtained in summer.

Comment is also made upon the desirability of some standard for condensed milk. One of its valuable constituents, the fat or cream, varies from as low as 5 to as high as 11½%, or more, and the price does not necessarily indicate its value.

Of other articles of food, those which were found to be most adulterated were canned goods, 50%, cocoa 40%, flavoring extracts, 80%, honey 34%, and vinegar 66%.

The edition of the report published in 1896, relative to the amount of alcohol in tonics, bitters and other patent medicines having become exhausted by repeated requests for copies by members of the W. C. T. U., the Board has again published the same list with such additions of new articles as have been examined since that date.

The method adopted in England for measuring the relative amount of protection afforded by the Food and Drug Acts in different districts is the ratio of samples examined to the existing population. Under this somewhat arbitrary standard, the figures in these four reports present the following results:

Ratio of samples to the population

In England one sample to 475 persons.
In North Dakota one sample to 375 persons.
In Massachusetts one sample to 270 persons.
In Ohio one sample to 2,030 persons.

With reference to the amount expended in litigation only two of the foregoing reports furnish information. In Ohio $14,993.09 was expended in 1902 in attorneys' fees for the prosecution of offenders, or an amount much greater than is expended in Massachusetts for the entire work of Food and Drug Inspection.

The amount expended in Massachusetts for attorneys' fees has not exceeded $500 in the entire twenty years of work, the officials of the Board of Health being instructed to enter complaints in the courts without assistance except when such assistance becomes necessary.

DANVERS INSANE HOSPITAL.

THE annual report of the Danvers Insane Hospital shows a slight increase in the number of patients over preceding years. On Sept. 30, 1903, there were 1,160 patients, a gain of seven during the twelve months. The present hospital population would, however, have exceeded 1,200 had certain patients not been transferred. This hospital, like many others of similar character, is endeavoring to follow the classification of mental disease made by Kræpelin and popularized in this country through the writings and influence of Hoch and Meyer. This scheme of classification has the merit of being a logically founded system applicable to clinical cases. It would no doubt be well for psychiatry in this country if this classification were universally adopted in hospitals for the insane. The efficiency of the laboratory side of the institution has been advanced during the year under Dr. Barrett's management, the successor of the late Dr. Worcester. The records show that eighty-three autopsies were performed, being sixty-five per cent of all deaths.

As is usual in reports of this character, the needs of the future are dwelt upon, particularly in the way of added buildings. Among other requests, a small appropriation is desired for two plain buildings to serve for the treatment of patients suffering from tuberculosis. The difficulty of treating such patients properly in general wards, the fact that tents have not at this institution proved satisfactory, and the general desirability of separating tuberculous from other patients renders this request most reasonable.

We have previously commented upon the inadequate salaries granted medical men in hospitals for the insane, and the question is again taken up in this report by the Consulting Board of Physicians. Bewailing the loss of various efficient officers through this cause, the writer of this section of the report makes the following pertinent comments:

Unless the State of Massachusetts proposes to maintain a permanent training school for the superintendents of insane asylums, an intelligence office for the benefit of more liberal communities, she must offer inducements greater than she at present affords. An increase of at least thirty-three per cent for the head of the asylum, and an opportunity for family privacy in the shape of a separate residence on the grounds outside, are no more than proper. In this connection we quote from a letter received by the chairman and written by the superintendent of a New England insane asylum, not, however, a State institution. It refers to our discussion of this same subject in last year's report: "Will you allow me to tell you with how much pleasure I have read your report to the trustees of the Danvers Insane Hospital? It is not alone the wisdom of your remarks on occupation that I desire to commend, but your generous utterance anent salaries and decent accommodations for medical officers will appeal strongly to the judgment and sympathies of all readers of the report, including, I hope, the trustees. Having myself the separate residence and enjoying seemly treatment in other respects, I am the more desirous that my Massachusetts brethren in the State's service shall fare equally well, and it is for this reason that I take the liberty of thanking you for your hearty and valiant championship."

This attitude seems to us eminently fair and reasonable.

MEDICAL NOTES.

ROCK SALT AS A SPECIFIC FOR YELLOW FEVER. — The London *Times* is reprinting certain articles which appeared in its columns one hundred years ago. Under date of Nov. 14, 1803, appears the following somewhat quaint announcement :

An *American Chemist*, at New York, announces a discovery which he positively asserts to be the specific remedy for the yellow fever. It is rock salt, to be chewed by the afflicted patient; and the *saliva* to be swallowed, and afterward molasses to be taken in copious doses: the drink to be pure water. He denies that the infection of the yellow fever is contagious, or that it proceeds from the access of *bile* in the habit. On the contrary, he maintains that the defect of bile is a prevalent cause; and that the infection proceeds principally from the effects of *gas* arising from animal putrefaction; of which *gas* rock salt is asserted to be the neutralizer.

A CANCER RESEARCH FUND. — It is authoritatively stated that the Huntington Fund for cancer research will have its headquarters at the Loomis Laboratory, New York, and be under the supervision of Dr. B. H. Buxton and Mr. S. P. Beebe. This fund provides for work particularly along chemical lines rather than by the pathological and bacteriological means. For this purpose material in large amounts is requisite, and a general appeal has been sent out to surgeons and pathologists to donate such material to this work as comes into their hands.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Dec. 9, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 60, scarlatina 34, typhoid fever 11, measles 136, smallpox 1.

AMERICAN ACADEMY OF DENTAL SCIENCE. — The annual session of the American Academy of Dental Science was held on the evening of Dec. 2 in Boston. Dr. Thomas Fillebrown read a paper on " The Physiology and Art of Vocalism in Speaking and Singing." Officers were elected for the ensuing year.

PROPOSED PUBLIC GYMNASIUM FOR BROOKLINE, MASS. — At a recent town meeting it was voted by a considerable majority to establish a municipal gymnasium. In spite of certain opposition, on the ground of extravagance, it was finally decided, after a spirited discussion, that a gymnasium was desirable. Dr. Walter Channing was among those who favored its erection.

BABCOCK MEMORIAL WARD. — As a testimonial to the Rev. S. G. Babcock, the Peabody Home for Crippled Children is to have a memorial ward furnished by the citizens of Hyde Park, Mass. Mr. Babcock has devoted much time and energy to promoting the welfare of the institution.

BURNING OF MEDICAL COLLEGE BUILDING AT BURLINGTON, VT. — The medical college building forming a part of the University of Vermont was completely destroyed by fire Dec. 2. The loss is estimated at $220,000, covered by insurance. The source of the fire remains unknown.

BEQUESTS TO HOSPITALS. — By the wills of John Walter of Melrose and Mrs. Catherine Robertson of Newton the Melrose Hospital Association receives $250, and the Newton Cottage Hospital $100, respectively. The latter hospital is also a beneficiary to the extent of about $9,000, from collections made in Newton on " Hospital Sunday."

NO MEDICAL SCHOOL FOR BROWN UNIVERSITY. — In our issue of Dec. 3 we stated that it had been vaguely rumored that Brown University of Providence was to establish a department of medicine in Boston, with the possible financial support of Mr. Rockefeller. We are glad to correct the impression which this rumor may have conveyed, by saying that we have since learned on unquestioned authority that it is absolutely without foundation, and that Brown University is not contemplating the establishment of a medical school here or elsewhere.

NEW YORK.

ST. JOHN'S GUILD. — The annual meeting of the trustees of St. John's Guild was held on Nov. 17, and among the officers elected were Dr. Abraham Jacobi, as second vice-president, and Dr. John F. Erdmann, as a trustee to serve for five years. The general agent reported that during the past season the floating hospital *Helen C. Juillard* made forty-five trips and carried in all 35,549 persons — 10,135 women, 17,596 children and 7,818 infants. The other boat of the guild was not operated this year, partly because of lack of funds and partly on account of the comparatively little illness among infants and young children and the remarkable coolness of the sum-

mer weather. At the seaside hospital at New Dorp, Staten Island, there were received 499 infants, 562 children and 461 mothers, and the deaths numbered 45. The annual contributions to the guild aggregated $50,859.

THIRTY-FIFTH ANNIVERSARY OF PRESBYTERIAN HOSPITAL. — The thirty-fifth anniversary of the Presbyterian Hospital was celebrated on Dec. 5. The annual report of the hospital for the year ending Sept. 30 showed that 40,195 persons received medical or surgical service, or an average of 545 a day, a larger number than in any previous year; 68% of the patients were treated gratuitously, and the average cost to the hospital for ward patients was $2.51 per day. A new home for the nurses on 71st Street, opposite the hospital buildings, is now in course of erection.

SMALLPOX. — In the last monthly bulletin of the State Health Department, issued at Albany on Dec. 5, attention is called to the increased prevalence of smallpox with the advent of winter, and emphasizes the necessity of more general vaccination. Although New York City has escaped the disease thus far this season, its alarming prevalence recently reported in Philadelphia is certainly very menacing.

Obituary.

WILLIAM INGALLS, M.D.

WILLIAM INGALLS died at the Boston City Hospital on Dec. 1, 1903, in his ninety-first year. He was born and lived, up to the time of entering Harvard College, in his father's house, which was on Tremont Street opposite the Granary Burial Ground. He was of direct English descent. The first of his ancestors who came to this country was Edmund Ingalls of Lincolnshire, England, who died in Lynn in 1684. His father, William Ingalls, was a distinguished surgeon of Boston, graduated from Harvard College in the class of 1790, and died here in 1857. The son, the subject of this short sketch, entered Harvard College in the class of 1835, and at the time of his death was one of the twelve oldest living graduates, four of whom were his classmates, Dr. Charles Bemis of Medford, William F. Frick of Baltimore, Hon. Edward Lander of Washington and Charles H. Parker of Boston.

Dr. Ingalls received his medical education, as was often the custom at that time, in his father's office, and at the Chelsea Marine Hospital, from his brother-in-law, Dr. Charles Harrison Stedman, who was at the time the resident surgeon, and a member of that family of Stedmans which has furnished so many notable practitioners to our profession, among them Dr. Charles Ellery Stedman, a nephew and the closest friend of Dr. Ingalls. He, Dr. Ingalls, began his professional work in Boston, but shortly after his marriage, in 1840, to Miss Julia Davis of Roxbury, he moved to Laurel Hill, La., where he acquired a large general practice, and where he remained for six years. His practice in the South was in a country district, and he used to make his visits on horseback, carrying his medicines and instruments in the saddle bags. Sometimes he was obliged to ride a distance of forty miles before reaching his patient's home. Among those he attended was Gen. Zachary Taylor. During his six years in the South he passed through the experience of at least one severe epidemic of yellow fever, and, escaping the contagion himself, worked with untiring devotion for those who were its victims.

On his return to the North he was appointed surgeon to the Chelsea Marine Hospital, and, later, on relinquishing this office, settled in Winchester, where he soon secured a large general and consulting practice. Here he remained until the outbreak of the Civil War. He had always had the soldier's spirit, and, had he followed his own inclination, would have entered the army rather than the medical profession. But for being dissuaded by his father, he would have already done so at the time of the Mexican War. With the outbreak of the Civil War he at once volunteered his services, and was appointed as surgeon to the 5th Massachusetts Regiment of Volunteers, later as major and surgeon of the 59th Massachusetts, and still later brigade-surgeon to the artillery force commanded by General Tidball. The greater part of the time he was with the army of the Potomac, with which he saw much active service. He was with the army throughout the four years of the war, and was mustered out on June 2, 1865, with the honorable record of having performed every duty demanded of him, invariably, promptly, thoroughly, courageously, and of having displayed marked ability in every post of responsibility that he held.

His powers of endurance were extraordinary, and enabled him to support fatigue and privation as few others could. On one occasion he worked, with the exception of six hours' sleep, taken at odd moments, continuously for five consecutive days and nights, during which the only food he had was one glass of milk in the first twenty-four hours, and for the rest of the time a small bit of hard tack or bacon at long intervals. He was on his feet, and either operating or dressing wounds almost the entire time. "And," he said, when speaking of it, "I was not tired at the end of it." "In fact," he remarked on another occasion, "I never knew what men meant when they said they were tired out, until after I was seventy years old."

It is said that in times of battle it was his custom to be as near the firing line as his duties would permit, and that his interpretation of the limits of his sphere of duty, so far as they related

to the front, was liberal. In consequence of this tendency of his, he barely escaped the fate which overtook so many of the soldiers of the Northern army when the mine was exploded at Petersburg. In answer to a question he said, in his gentle voice, the tone of which seemed to contradict the thought that the joy of battle could ever have dwelt in him: " Well, perhaps we were rather far forward now and then, but I do not think improperly. Derby and I could never see any harm in it, and sometimes we thought that the boys rather liked to have us there, and perhaps found some comfort in our being near at hand."

At the end of the war he again resumed his civil work, this time in Boston, and was actively engaged in it during the ensuing twenty-one or two years, after which he withdrew and lived a retired life in Roxbury for the last twelve years.

He was appointed as one of the visiting surgeons on the staff of the Boston City Hospital in 1870. and held that position for fifteen years, being made consulting surgeon of the hospital when resigning his position on the visiting staff. He was also surgeon to the Children's Hospital when it was first opened, and contributed much toward its subsequent success.

He kept up his interest in many of the modern advances in the profession, and even in the last year or two attended, from time to time, meetings of the medical societies of which he was a member, and also visited the hospital. The last time of his doing so was within a month of his death, when he was present at one of the surgical clinics, where his head of thick white hair and venerable face formed a striking contrast with the youthful appearance of the students about him. He was in fullest sympathy with these young men who were pressing forward upon the threshold of the entrance to the profession, while he, his hand resting on the latch of its door of exit, already opening to let him pass, lingered a moment to look back at the eager beginners, and doubtless gave them his silent blessing and wished them God speed, for such was his wont.

As a surgeon his judgment was deliberate and well balanced. As an operator he was neither bold nor brilliant, but accurate, careful, thorough, effective and very neat. No one surpassed him in the after-care of the patient. He was nearly, if not actually, the first American surgeon to do a nephrolithotomy, extracting a very large calculus from the kidney, the patient living for many years afterward. In a series of two thousand consecutive obstetric cases attended by him, the larger part of which occurred before the introduction here of the aseptic regimen, there was not a single instance of puerperal sepsis, and only three deaths.

He remained free from the infirmities which are usually associated with the last years of so long a life, preserving his erect carriage, firm step, bright pink color in the cheeks, and an unclouded intellect until the end; and as it appeared in him, old age was beautiful.

With the death of William Ingalls the profession loses one of its number who, throughout an unusually long life, exhibited those qualities which have made the name " physician " one of the most honorable of titles, have earned for those who hold it the unquestioning trust, and for such of them as he, the gratitude and love of those who in sickness and suffering have known the beneficence of their touch and the comfort of their helpful presence.

He belonged to a generation of physicians who did not think their duties ended with the treatment of disease, but who were ever ready to take upon their shoulders the burdens of the members of the households of their patients and often became their most trusted friends and wisest counselors. He conceived his professional duties in the same spirit at that which animated the rugged old Scotch hero portrayed by Ian Maclaren in his story, " A Doctor of the Old School," which is the highest tribute to our profession ever paid to it, perhaps, in the English language, and William Ingalls might well have been taken as the model for Weelum Maclure.

There lived in the tender heart of this friend who has just died the gentle spirit which alone makes the gentleman. The virtues which are often upon men's lips only, he lived daily, and as though in recognition of the unfailing consideration he showed for others, death, in summoning him to rest, touched him also gently. The living friend has become a living memory, and as such, for those who knew him, will dwell in that chamber in which are stored the memories most treasured.

No more fitting words could be added to the farewell that is spoken to him here than those which were quoted on the day of his funeral — " Soldier of Christ, well done! "

CYRUS EDSON, M.D.

DR. CYRUS EDSON of New York died from pneumonia at the Roosevelt Hospital on Dec. 3, after a brief illness. He was a son of Franklin Edson, ex-mayor of New York, and was born in Albany, N. Y., on Dec. 8, 1857. He received his academic education at Columbia University, and was graduated with honor from the College of Physicians and Surgeons, New York, in 1881. He was one of the famous Columbia crew which won the Henley cup in 1878, the only time that an American four have ever had that distinction. In 1882 Dr. Edson was appointed Assistant Sanitary Inspector in the New York Health Department, and he was promoted through successive grades until he became Chief Inspector of the Second Division. In 1891 he was appointed President of the Board of Health. Among the other positions held by him were: President of the Board of Pharmacy, Vice-President of the American Society of Public Analysts, Visiting Physician to Charity Hospital and Assistant Surgeon of the 12th Regiment, New York State National Guard.

Miscellany.

SURGICAL ADVANCE IN THE UNITED STATES.

Dr. Frank P. Foster of New York contributes an article on this subject to the Christmas issue of the *World's Work*. The closing paragraph of the article we reproduce:

It will be seen from this brief sketch that our countrymen have not only given to the world the priceless boon of anesthesia, but have also materially advanced the surgery of almost every part of the human organism. American surgery has not a little to be proud of and stands securely on its own foundations. We are always ready to learn from others, and to that end numbers of our men annually visit European capitals for purposes of special study; but no longer, as in the remote past, do they seek for a general professional education in Edinburgh, London, Paris, Vienna, or Berlin, to mention those cities in the chronological order in which one or another of them was formerly the Mecca of the American medical student and young practitioner. Of course, the time will never come, and never should come, when American surgeons will cease their endeavor to learn all they can from those of other countries; but we feel now, as we have felt for some decades, that we can give quite as much as we are likely to take.

NEW YORK CITY TRAINING SCHOOL FOR NURSES.

The new buildings of the New York City Training School for Nurses, on Blackwell's Island, were formally opened on Dec. 2. There are now three of these, the central one being the present Nurses' Home, which was originally constructed and for some years used as the city smallpox hospital. They have been named respectively "Schuyler Hall," in honor of Miss Louisa Lee Schuyler, the founder of the State Charities Aid Association, which in 1873 organized the Bellevue Training School for Nurses, the first general school of its kind in this country; "Jones Hall," in honor of Mrs. Cadwalader Jones, who has been chairman of the Advisory Board of the School ever since its establishment in 1875; and "Rice Hall," in honor of Mrs. William B. Rice, for some years a member of the Advisory Board and at present one of the managers of the Bellevue Training School. Jones Hall is a four-story building, 35 by 100 feet, and contains on the first floor a lecture room, a drawing room, and two isolation rooms for cases of contagious illness among the inmates. Each of the other three stories has sleeping rooms for the accommodation of eighteen nurses. On the first floor of Rice Hall, a similar building which is not yet entirely completed, there will be the offices of the school, the chemical and bacteriological laboratories, and a room for the classes in dietetics, while the three upper floors will be devoted to sleeping rooms. A pleasant feature of the opening exercises was the reading of a letter from President Roosevelt to Commissioner of Charities Folks, in which he said: "I greatly wish I could be present . . . especially because it has been my good fortune to know and to work with Mrs. Cadawalader Jones, Miss Louisa Lee Schuyler, and Mrs. William B. Rice, and I should like to testify my regard for them, while congratulating you, and also those associated with you, upon being connected with so admirable a work." Bishop Potter made a short address and Dr. Edward S. Peck, chairman of the Examining Board, spoke of the improved methods in the training of nurses which it is purposed to adopt. Mrs. Cadwalader Jones told of the progress that had been made since the school was opened on Aug. 1, 1875, with sixteen pupils, and warm applause was called forth by a reference she made to a former Commissioner of Charities, the late Thomas S. Brennan, who in 1886 quarantined himself and personally supervised the cleansing and disinfection of the Riverside Smallpox Hospital to turn it into the Nurses' Home.

Correspondence.

A DENIAL FROM BROWN UNIVERSITY.

President's Office, Brown University,
Providence, Dec. 8, 1903.

Mr. Editor: My attention has been called to the fact that some one has reported to you that Brown University is to take over the College of Physicians and Surgeons in Boston as a University Department of Medicine. Kindly allow me to state in your columns that this rumor is entirely baseless. I cannot imagine how it originated — certainly not at Brown University. We have no intention of establishing a medical school, and no officer of the University ever dreamed of any connection with the College of Physicians and Surgeons.

Very truly yours,
W. H. P. Faunce.

THE PAUPERIZATION OF MEDICAL SERVICE IN BOSTON.

Nov. 28, 1903.

Mr. Editor: This is a subject worthy of careful thought, if, in the future, the honorable practice of medicine is to be regarded as a means of getting one's livelihood. One phase of it has been forced upon my attention recently, and not for the first time. Preliminary to narrating an illustrative case, let me state that several years ago, while in attendance at the meeting of the American Medical Association at Milwaukee, I asked the genial Dr. Sam French, a resident, to tell me where their city hospital was situated. "We haven't any," he replied, "the people of Milwaukee are industrious and self-respecting, and would have to be educated to the use of such an institution. They pay for medical service and could not think of getting it otherwise." What a contrast with the Boston of then or now! Is there an honest effort made in all Boston clinics to remind people of this self-respect when they are tempted to evade paying for treatment they can afford to pay for? If so, why should cases like the following occur? About a month ago I was called to see a little boy suffering from hip-disease, being treated at his home by the Children's Hospital. I examined the child and told the parents that with the treatment being given he would get well; that if they wished me to treat the child they would have to pay me and also inform the hospital authorities of their decision. They did both, that is, they agreed to pay me for my services (the father is a member of the fire department) and the mother called at the hospital and informed the doctors in attendance of their decision. A few days after I had commenced to treat the child (I did not do so until after the hospital was notified by the mother) a nurse from the hospital called, inspected my dressing, and remarked to the mother of the child

that she feared the child's leg would become shortened without the hospital traction treatment. A few days after this, a postal came from the hospital, requesting the child to be brought to the hospital and left there for treatment. It seems to me that persons who can afford to pay for treatment outside of clinics should be encouraged to do so, instead of attempts being made to prevent them from doing so as in the above instance.

The poor both worthy and unworthy, should always and in every case be given medical service for the asking, and indeed should be sought, for that their physical condition be made better. This letter does not apply to them; it treats of the efforts made to pauperize medical service — the efforts to prevent from so doing people able and desirous of paying for medical treatment. I feel it a duty to report such cases and trust that public medical opinion will prove corrective.

Respectfully yours,

EDWARD A. TRACY, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 28, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,283	331	21.36	21.28	2.81	2.26	1.32
Chicago . . .	1,885,000	512	125	22.65	18.36	3.71	3.71	3.32
Philadelphia	1,378,527	495	109	20.80	12.32	2.83	1.01	1.82
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	177	54	24.29	12.99	3.39	2.82	2.82
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,894	—	—	—	—	—	—	—
Pittsburg . .	351,745	137	—	32.85	12.41	2.92	2.19	12.28
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,230	60	16	16.67	18.33	5.00	1.67	—
Boston . . .	603,163	188	54	23.93	19.68	1.59	1.59	2.13
Worcester . .	132,044	38	13	15.79	13.15	—	7.89	—
Fall River . .	115,549	38	19	10.52	13.15	5.26	5.26	—
Lowell . . .	101,959	28	2	10.71	14.28	—	—	7.14
Cambridge .	98,639	22	5	36.36	18.18	4.54	13.63	—
Lynn	72,497	22	5	22.72	—	9.09	—	—
Lawrence . .	69,756	29	11	24.14	13.79	6.89	6.89	3.45
Springfield .	69,389	26	9	23.10	11.55	—	—	—
Somerville .	68,110	15	5	6.67	20.00	6.67	—	—
New Bedford	67,198	25	8	36.00	4.00	4.00	—	8.00
Holyoke . . .	49,286	—	—	—	—	—	—	—
Brockton . .	44,873	7	1	42.90	—	—	—	—
Haverhill . .	42,104	13	2	7.70	23.10	7.70	—	—
Newton . . .	37,794	4	1	25.00	—	—	—	—
Salem	36,876	11	2	—	27.27	—	—	—
Malden . . .	36,286	13	6	23.10	—	7.70	—	—
Chelsea . . .	35,876	12	—	25.00	8.33	—	—	8.33
Fitchburg . .	35,069	—	—	—	—	—	—	—
Taunton . . .	33,656	16	5	6.25	12.50	—	—	—
Everett . . .	28,620	5	1	40.00	—	—	—	—
North Adams	27,862	9	4	44.44	22.22	11.11	—	—
Gloucester .	26,121	0	—	—	—	—	—	—
Quincy . . .	26,042	8	1	12.50	12.50	—	—	—
Waltham . . .	25,198	7	3	—	—	—	—	—
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,589	5	—	—	—	—	—	—
Chicopee . .	21,031	5	0	20.00	—	—	—	—
Medford . .	20,962	3	1	—	—	—	—	—
Northampton	19,883	6	1	16.67	50.00	—	—	—
Beverly . . .	15,392	6	1	33.33	16.67	16.67	—	—
Clinton . . .	15,161	2	2	100.00	—	50.00	50.00	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	—	—	—	—	—	—	—
Woburn . . .	14,300	3	—	33.33	—	—	—	—
Hyde Park .	14,175	3	0	—	33.33	—	—	—
Adams . . .	13,745	—	—	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	4	2	25.00	25.00	25.00	—	—
Melrose . . .	13,600	2	—	50.00	—	—	—	—
Westfield . .	13,418	0	—	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,732	5	—	—	20.00	—	—	—
Framingham	12,534	1	0	—	—	—	—	—
Peabody . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	3	0	33.33	33.33	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown . .	11,077	2	0	—	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,250; under five years of age, 795; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 714, acute lung diseases 567, consumption 374, scarlet fever 35, whooping cough 6, cerebrospinal meningitis 8, smallpox 18, erysipelas 6, puerperal fever 5, measles 12, typhoid fever 74, diarrheal diseases 76, diphtheria and croup 100.

From whooping cough, New York 4, Boston 1, Springfield 1. From erysipelas, New York 1, Chicago 2, Pittsburg 2, Boston 1. From smallpox, Philadelphia 11, Pittsburg 7. From cerebrospinal meningitis, New York 3, Baltimore, Boston, Worcester, Brockton and Woburn, 1 each.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Nov. 14 the death-rate was 17.9. Deaths reported, 5,169; acute diseases of the respiratory organs (London) 182, whooping cough 51, diphtheria 61, measles 79, smallpox 1, scarlet fever 43.

The death-rate ranged from 6.0 in Hornsey to 32.2 in Warrington, London 16.7, West Ham 16.8, Brighton 10.8, Southampton 15.6, Plymouth 14.0, Bristol 14.6, Birmingham 21.4, Leicester 19.4, Nottingham 22.9, Liverpool 21.4, Bolton 18.3, Manchester 20.1, Salford 25.3, Bradford 22.1, Leeds 23.9, Hull 16.9, Cardiff 12.7, Rhondda 15.3, Merthyr Tydfil 18.9, Kings Norton 7.4.

METEOROLOGICAL RECORD.

For the week ending Nov. 28, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S. . 22	30.28	32	38	27	69	87	78	N E	N W	1	5	O.	O.	.02
M . 23	29.88	37	43	31	86	92	89	N W	S	2	9	F.	R.	.05
T. . 24	29.64	36	44	29	68	47	58	W	W	12	24	C.	C.	T
W . 25	29.96	26	32	21	53	43	48	W	W	18	16	C.	C.	O
T. . 26	30.06	22	28	17	50	36	43	W	N	9	6	C.	C.	O
F. . 27	30.03	21	27	15	79	56	68	N W	N	11	15	F.	O.	O
S. . 28	29.76	26	32	21	50	64	57	N	W	12	8	O.	C.	O
☞	29.94		35	23			63							.07

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING NOV. 28, 1903.

A. R. ALFRED, surgeon. Commissioned surgeon, with rank of lieutenant, from Jan. 4, 1903.

E. R. NOYES, pharmacist. Warranted pharmacist from Oct. 20, 1903.

A. G. GRUNWELL, surgeon. Detached from the Naval Hospital, Washington, D. C., and ordered to the "Minneapolis."

D. N. CARPENTER, surgeon. Ordered to the Naval Hospital, Navy Yard, Washington, D. C.

E. R. NOYES, pharmacist. Ordered to the Naval Museum of Hygiene and Medical School, Washington, D. C.

RECENT DEATHS.

William Ingalls, M.D., M.M.S.S., died in Roxbury, Dec. 1, 1903, aged ninety years.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Memorial Hospital, Richmond, Va. 1903.

Was it Wise for the American Medical Association to Change its Code of Ethics? By D. W. Cothell, M.D., of Baltimore. Reprint. 1903.

A Case of Diabetic Intraocular Lipemia in which the Blood was Examined During Life. By W. Hale White, M.D., F.R.C.P. (Lond.), of London. Reprint. 1903.

The World is Idea. By Herman Gasser, M.D., of Platteville, Wis. Reprint. 1903.

The Medical Record Visiting List or Physicians' Diary for 1904. New Revised Edition. New York: William Wood & Co.

Original Articles.

MALARIA AND MOSQUITOES OF WORCESTER. A YEAR'S OBSERVATIONS ON THE HABITS OF CULEX AND ANOPHELES.[1]

BY WILLIAM W. MCKIBBEN, M.D., WORCESTER, MASS.,

Assistant Resident Physician, South Department, Boston City Hospital.

It has been fully demonstrated that the plasmodium malariæ, like the smallpox germ, has only two known cycles in its existence — the asexual in man and a further or sexual development in the stomach wall of a certain genus of mosquito, called anopheles. Strikingly similar, but more recent discoveries are that spotted fever of the Bitter Root Valley, Montana, is due to a hematozoön which has as its intermediary host the gray gopher, and is transmitted to man by the bite of the tick; and that yellow fever is caused by a protozoön, — the myxococcidium stegomyia, carried by the brindled mosquito,— stegomyia fasciata. These analogies doubtless soon will result in the discovery of the etiology of other acute infectious diseases, when we cease to look so much for a bacterium as for a protozoön, searching in the skin and in the lymph and serous discharges rather than in the blood. The enormous pathological changes going on in the skin in such a short space of time, would suggest that a protozoön can be found there, not only in smallpox, but also in scarlet fever and measles, multiplying with a rapidity equal to that of the plasmodia malariæ in the red blood corpuscles.

It is to the Italians that we are chiefly indebted for our greatly increased knowledge as to the part that the anopheles plays in this life history of the malarial parasite. They in turn owe much to Dr. Theobald Smith for his work in demonstrating, in 1893, the fact that the malaria of cattle, or Texas fever, is carried by the southern cattle tick, and to Ronold Ross for his discovery in 1898 that the culex mosquito is the intermediary host in the malaria of sparrows. Among the names which deserve special mention is that of the French army surgeon, Laveran, who in 1880 discovered the malarial parasite; Dr. A. F. A. King of Washington, who in 1883 suggested the mosquito as being responsible for epidemic malaria; Sternberg, Councilman, Osler, MacCallum and Thayer in this country, and Patrick Manson, Koch and Golgi in Europe. But to the Italians Marchiafava, Bignami, Celli, Grassi and Bastianelli (1899–1900) belongs the honor of demonstrating experimentally the transfer of the parasite of human malaria by the anopheles mosquito. They also transmitted malaria by direct subcutaneous and intravenous inoculation, both in the febrile and apyretic periods, regardless of the stage in which the parasite existed. They caused paroxysms in from one half to three weeks after injecting even less than one drop of infected blood. And very natural it is that the Italian investigators should show so much interest, because in Italy 2,000,000 cases of malaria are recorded annually, with 15,000 deaths. The Adriatic railroad, 850 miles long, expends each year 1,050,000 francs to fight the disease. In the last twenty years the Italian army has had 322,000 cases. Five million acres of land on the peninsula remain uncultivated on account of malaria. The regions in Italy where the pestilence is most prevalent are those which contribute most largely to permanent immigration.

At the time when the sallow-faced soldiers were returning from Cuba in 1898, Worcester was collecting cheap Italian labor for constructing the Holden dam, and for extending various suburban lines of street railroads, while the Metropolitan water board was planning for the great dam at Clinton. Consequently Worcester represented a center where the Italian immigrants segregated into a large colony. Dr. Theobald Smith in the recent Shattuck lecture said, " It will be seen that I am putting the burden of starting new foci of malaria and of awakening the disease in the spring upon the older, latent or partly immune cases, who are in that stage of immunity which readily produces gametes after a relapse." Consequently the important part that the Italians, fresh from malaria-infected Italy, and the soldiers with these gametes latent in their blood, played in infecting the anopheles, is readily seen. With the source of the infection thus at hand, Worcester needed only the intermediary host.

This was present already in shape of the anopheles mosquito, harmless in the past because uninfected. She, by means of her pharyngeal pump, beautifully adapted for sucking infected blood, was ready in the course of ten days of proper temperature to give a hypodermic injection of sporozoites to the first unfortunate victim or victims she met. Water in which this female could lay her eggs and rapidly propagate her genus was another requisite in the chain; this Worcester furnished in an ideal way, so that the increase in the number of cases in the last five years has become serious and can no longer be ignored. The commercial progress of the second city of Massachusetts is dependent upon the good health of its citizens, particularly of the laboring classes, — Worcester being a great manufacturing center. It is this element in society which suffers greatest from malaria, being segregated into " three deckers " or tenements along the slow-moving grassy streams,— the ideal anopheles breeding places.

The employees of the factories consist principally of north country folk, in the shape of French Canadians, Swedes, Finns and Irish. Not having attained immunity by living in tropical or sub-tropical climates, they are especially susceptible to infection. In these non-immunes malaria manifests itself in almost every conceivable phase, from malarial sciatica to chronic malarial cachexia. The superin-

[1] Read before the Worcester Board of Trade, Nov. 21, 1902; Worcester District Medical Society, April 8, 1903; Boston Society of Medical Sciences, June 2, 1903.

tendent of the American Steel & Wire Company is authority for the statement that a conservative estimate shows that 10% of their 3,500 employees at the south works on the Blackstone river in Quinsigamond village were forced to give up work last summer on account of chills and fever; that he was threatened with having to shut down the central works altogether.

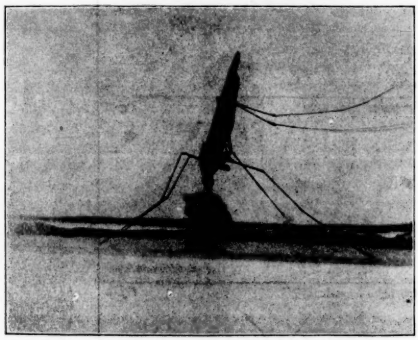
An elderly physician with an extensive practice in Quinsigamond village made the assertion that practically everybody in the village has had " the ague." He recalls one of the first cases there ten years ago when malaria was prevalent down the river, increasing in amount in inverse proportion to the distance from Providence. It is an exaggeration to say that every inhabitant of Quinsigamond village has had malaria, but it is a fact that every house visited gave a history of at least two sufferers. In the cellars adult anopheles were invariably found, easily recognizable at first sight by their characteristic resting positions,— their bodies at right angles to the surfaces on which they had alighted.

At the home of a well-to-do coal merchant all three of the servants had " swamp fever," while none of the members of the family suffered. Investigation showed that the servants' quarters were not screened, while the main part of the house was most carefully protected from nightly invasions of anopheles. The family had learned from experience that little pleasure could be derived from sitting on the veranda in the evening, owing to the fierce attacks of mosquitoes after sundown; they had not burned pyrethrum powder, however. Anopheles were found in both the cellar and barn of the house. Not three hundred yards away was Quinsigamond pond, made by damming up the river just above the wire mills; along the edges of the water in the thick grass anopheles larvæ were discovered quite easily. The supervisor of the Quinsigamond schools said that there was scarcely a day went by but that he was called upon to place a shaking lad on the radiator. This same supervisor instigated a meeting of the Worcester Board of Trade where three hundred representative citizens met to listen to a stereopticon talk on mosquitoes. The result was that a continued article on "Mosquitoes" was published in the *Worcester Magazine;* but nothing further came of it. South of Quinsigamond village, at Whitinsville, Mr. Whitin gave 25% as the loss in number from malaria of his French Canadian employees. Dr. Hodge of Clark University, Worcester, made a visit and showed him how easy it was to get rid of the mosquitoes — consequently the malaria — by draining, filling in, introducing fish and " petrolizing;" in other words, in not allowing the existence of any standing water, as all mosquitoes pass their larval stage in water as " wiggletails."

Last October the records of nine of the leading physicians visited gave a total of 2,565 cases of malaria treated from April 1 to October 1. One physician of South Worcester whose practice is largely along the Blackstone river and Still Water pond treated 560 cases in six months. He made the statement that almost every person in every house on certain streets had a history of periodic chills and fever. Needless to say, he did not have time to verify the diagnosis by blood examination. At a " mosquito talk " given in a hall on one of the streets along the river fully 50% of the 400 persons present confessed to having had malaria. During the summer months one hundred and twenty-five cases of the severest types of the disease were treated at the City Hospital, filling the medical wards to the exclusion of almost all other diseases, until the epidemic of eleven cases of typhoid, following a certain milk route, came in October. There were twenty-five house cases at Memorial and twenty-five at St. Vincent's Hospitals. The number of cases, including recurrent, treated at the out-patient departments of these three hospitals was too numerous to attempt to collect from the records, so with the several thousand addresses already obtained, a map was made out to show the relationship between the breeding places of the anopheles and the residences of the victims. A map of the city was procured and dots of red ink jotted down to indicate the adddresses of the sufferers. A capital " A," bearing more significance than in Hawthorne's " Scarlet Letter," indicated the points along the various streams and bogs where anopheles larvæ or adults were found. This also included some breeding places discovered by Dr. Hodge and his class in biology.

On completion of the map some striking facts presented themselves. It was seen that Worcester was completely surrounded by a malarial band, the center of the city being free except for the area around the below mentioned dumps and a few cases traced to sleeping at the lake, South Worcester, etc. The little red dots on the map rarely represented distances of more than one-eighth mile or two hundred yards from the banks of the Blackstone and Middle rivers, Still Water and Curtis ponds, Beaver and Mill brooks, and Lake Quinsigamond with its tributaries running through North Grafton to Milbury. Inside of the area thus surrounded were two foci of great importance, notably the Southbridge and Shrewsbury street dumping grounds and bogs. The latter borders on the aforementioned Italian colony and doubtless explains the rapidity of the spread of the infection with the coming of the latent cases. Back near the railroad at the corner of the Coliseum fence is a large stagnant pool, one half breeding culex and anopheles larvæ, the other half sterile, owing to a film of grease from the adjacent organic refuse. The tin cans on the surrounding dumps, half full of rain water, contain thousands of culex " wigglers," the adult mosquitoes being thick around the mouths of the cans. Across the street, East Park pond is free, owing to tadpoles, while Bell pond just above on the hill is also free because of its " trained edges," and because it contains hornpout and sun-perch.

Unfortunately hundreds of these little fish, which could well be utilized for stocking other ponds (gold fish costing ten cents a pair) are destroyed by being packed solid in a pipe which furnishes the water for East Park pond below. The number of cases was found to be in proportion to the number of inhabitants and number and proximity of anopheles. Under favorable conditions anopheles females thirsting for warm blood would fly a quarter of a mile, at times not even hesitating to go up a considerable hill. Being of retiring dispositions, they rarely came out of the grass and dark hiding corners by day; in fact, it was well-nigh impossible to get them to bite while it was yet light. This explains the old theory that malaria was due to an indefinite something called "miasm" coming up from a swamp at night. The writer recalls the time when his old family physician down south advised the avoidance of this mist or "bad air" after sunset. We now know that is the time anopheles begin to fly at large. We also know that the marsh gas seen bubbling up out of the bog is really harmless.



'Shame-faced, head-down anopheles." Photo. × 3 times (Dr. Hodge)

It is a recognized fact that mosquitoes, being so delicate of wing, will not venture out of the grass, bushes, trees, ivy or from the lee side of the house while a strong wind is blowing. This accounts for the great prevalence of swarms of culex on warm, sultry evenings; not only does the high temperature favor breeding, but the absence of breezes allows them to come out of their hiding places. The condition which best favors anopheles flying so great a distance as four hundred yards is that of a continuous but gentle breeze. This condition is present on most summer evenings — the wind blowing softly from the west; consequently, the fact develops that most of the malarial victims live east of the breeding places. This is true in Quinsigamond village, South Worcester, New Worcescester, "The Island," for two miles along Beaver brook, Mill brook and "The Sanctuary" at Lake Quinsigamond.

Culex is much more of a local insect. Being so addicted to the drink habit and being such a prolific breeder, she rarely flies more than one hundred yards away from her birthplace, so that every house suffering from swarms of culex will find the "wiggletails" close at hand in standing water, in a flower pot, tub, rain barrel, house drain, street catch-basin, old tin cans containing rain water, paint-pots, gutters, pools, ponds and bogs. Destroy the breeding places and the adults will all go away in search of water in a day or two. Both culex and anopheles were hatched from eggs, larvæ and pupæ. The adult females, watered and fed, were kept alive in bell-jars as long as two months. Without water the adults died within two days but went without food for a week or ten days, becoming greatly emaciated, however. Among the best food-stuffs were milk, bananas, grapes, grass and

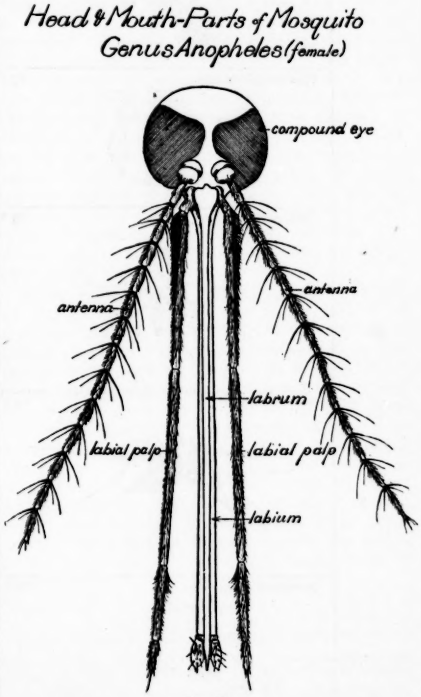
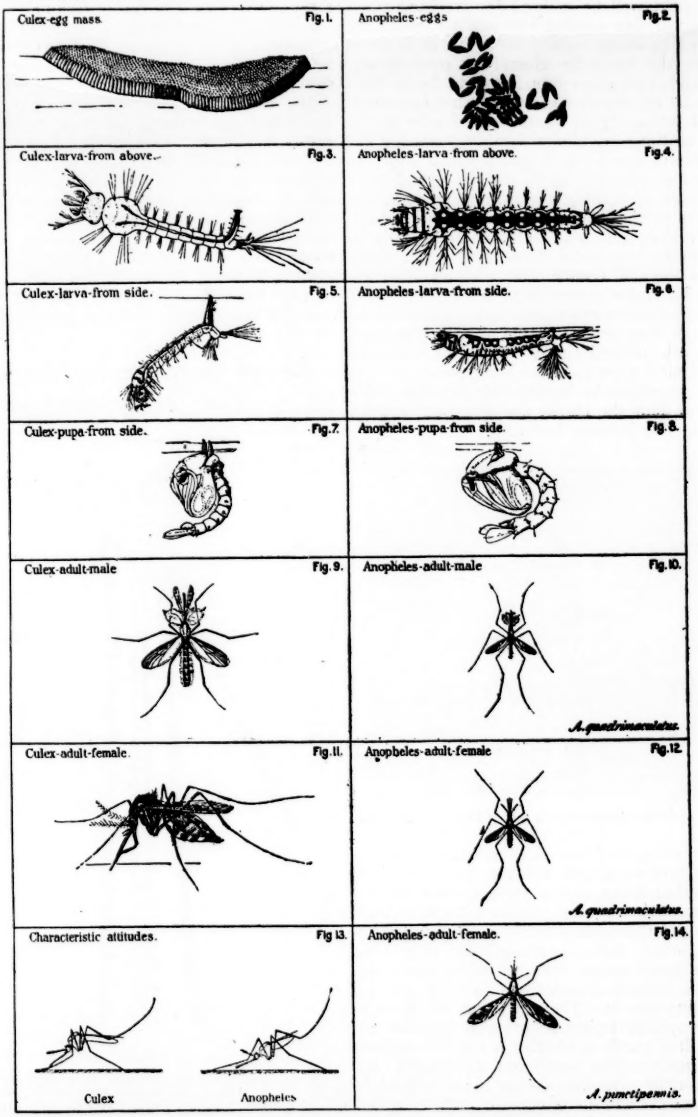


FIG. B.

sugar and water. Occasionally they were allowed a little human blood, the female anopheles attacking the hand viciously, not circling around looking for a "soft spot," as did female culex, but striking hard without hesitation or song; apparently anopheles did not secrete toxin in the salivary gland to the extent that culex did,

Figures B and C are from microscopic drawings used through the courtesy of Mr. Roy Cushman, Clark University, Worcester.

MOSQUITOES. PLATE



Copied by permission from Bulletin No. 25 new series, U S Dept of Agriculture (Howard, Notes on Mosquitoes)

DESCRIPTION OF PLATE.

Differences between Culex (the ordinary Mosquito) and Anopheles (the malaria-carrying Mosquito).

Culex eggs.—Two hundred to four hundred eggs laid at one time by one female, aggregated in masses side by side, large end down; egg mass concave above; general color of mass from above, brown; the larvæ issue from lower end of egg, directly into the water, about twelve to sixteen hours after the eggs are deposited. (Figure 1.)

(Description continued on p. 669.)

as no wheal or irritation was produced. The point of puncture could be made out distinctly, however. Consequently it is easy to see how persons while asleep could be bitten unawares. Female anopheles sank her proboscis half its length into the skin, and on one occasion continued to swell her abdomen with blood until she burst, the blood spattering around on the hand.

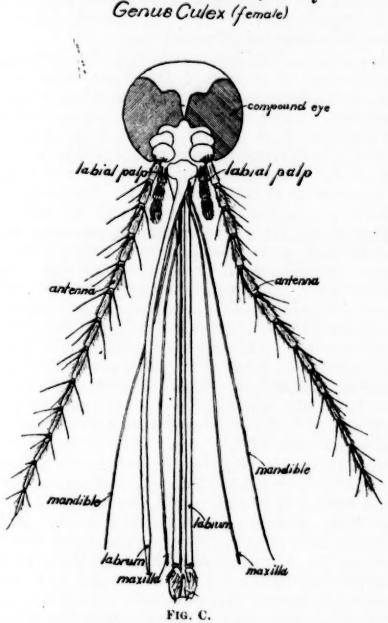


FIG. C.

Neither culex nor anopheles males could be made to bite; in fact the males lived only a day or two, dying after copulation. The females live on indefinitely under natural conditions, the exact duration of life not being ascertainable. They have many natural enemies such as dragon flies, bats, whippoorwills, night-hawks and winds; some females may possibly survive a whole season and then hibernate in an old barn, vacant house, cellar, or hollow-tree trunk; but in all probability very few females succeed in living more than a couple of months. The cellars of those houses within a radius of one hundred yards from the breeding streams presented an interesting appearance; so much so, in fact, that a flashlight was taken of a white-washed beam in Dr. Hodge's cellar in order to make a stereopticon slide. Dr. Hodge left his cellar windows open in November so the adults would hibernate there and specimens could be obtained for demonstrations at lectures during the winter. The result was that almost every available spot on the beam photographed was occupied by an adult female.

Dr. Hodge used small bottles with conical holes through the corks for collecting specimens, by placing the bottles down over the mosquito; when the bottle was filled, cotton was inserted in the holes. Thus the anopheles were easily separated from the culex, being differentiated by the resting position, the spotted wings (especially marked in anopheles punctipennis). the long labial palpi, larger bodies, and the fact that the hind legs rarely curled up over the tail as did those of culex. At a " mosquito talk " these bottles were passed around, and the room being warm the mosquitoes began to sing. By holding the mouths of the bottles to their ears the appreciative audience easily heard the shrill songs of culex on the one hand, and the low-voiced hum of anopheles on the other, the difference being very marked.

In the spring the impregnated females fly out to deposit their eggs on the water. To illustrate the rapidity with which culex breeds, this instance is cited: In order to obtain larvæ and pupæ for an evening lecture, at five o'clock a dozen dippers full of stagnant water were taken from a small pool in a bog where the deep grass and cat-o'-nine-tails were growing thickly. This water was strained through a net in order to get the larvæ or " wrigglers " into clear water in one bell-jar. The " wrigglers " were all culex, having long breathing tubes at the tail end, which they brought to the surface to protrude for air every two or three minutes, the bodies being at an angle of 45° with the surface, — head down.

(To be continued.)

Anopheles eggs. — Forty to one hundred eggs laid at one time by one female; eggs float separately on their sides; general color of eggs from above, black; the larvæ issue in three to four days. (Figure 2.)

Culex larvæ. — General color, brown; head and thorax wide; breathing tube long. (Figure 3.) Feed near surface, breathing tube extended up to air, body at angle with surface, head and mouth down (Figure 5); when disturbed, they sink with quick wriggling movements downward to the bottom. The larvæ become pupæ in seven to ten days.

Anopheles larvæ. — General color usually black, but varies (green, etc.); head and thorax relatively narrow, breathing tube short (Figure 4); feed near surface, breathing tube extended up to air, body parallel with surface, head also at surface, mouth downward when resting, but turned up to the surface to seize food by rotation of the head (Figure 6); when disturbed, they skate backwards over the surface of the water, only sinking when frightened. The larvæ become pupæ in about sixteen days.

The pupæ of Culex and Anopheles resemble each other somewhat closely. (Figures 7 and 8.) Differences exist, but are not sufficiently striking for ready appreciation. The culex pupa becomes an adult mosquito (imago) in about two days; the anopheles pupa in five to ten days.

Adults. — The males of both genera can be distinguished from the females of both by the tufted antennæ of the former. (Compare Figure 9 with Figure 11, and Figure 10 with Figures 12 and 14.) Culex adults (male or female) can be distinguished from anopheles adults (male or female) by the spots on the wings of the latter, small and brown in anopheles quadrimaculatus (Figures 10 and 12), large and black in anopheles punctipennis (Figure 14).

Culex adults, when resting on a solid surface, take a hump-backed attitude, the abdomen lying more or less parallel with the surface; anopheles adults take a straight position, the abdomen pointing away from the surface (Figure 13). In this regard, the difference between Anopheles punctipennis and culex is very striking, but is much less marked between culex and Anopheles quadrimaculatus. Anopheles females of both species can be further distinguished from all culex females since they possess long palps, giving them the appearance of having three "stings" instead of one. In the culex female the palps are so short as to escape observation.

NOTE. — These reproductions are unfortunately to no definite scale, and may give the impression that the culex is larger than the anopheles. It is just the reverse, however.

SOME CASES OF FACIAL ERYSIPELAS FROM EROSIONS OF THE NASAL SEPTUM.[1]

BY JOHN W. FARLOW, M.D., BOSTON.

IN all cases of erysipelas it is of great importance to find out if possible the point at which the infection enters the system. In scalp wounds, especially before the days of antiseptic surgery, erysipelas was the complication most feared. In obstetric practice, tears of the genitals were recognized as furnishing easy means for the much dreaded infection. In fact, all lesions of the skin or neighboring tissues may be the starting point where the germ of erysipelas finds lodgment and begins its rapid extension.

There is one form of erysipelas, facial, which seems particularly prone to occur where there has been no injury, a sort of "medical" erysipelas in contradistinction to the "surgical" form, and as there is no external lesion, a point of entrance is not looked for. The usual description of the disease speaks of it as beginning generally on one side of the cheek and then going over to the other side of the nose and face. As the outside of the nose is often the first part involved and as the germs in the air are naturally drawn into the nose, it is certainly reasonable to look inside the nose and see where such germs may find lodgment on a broken surface. Cracks and fissures of the vestibule, as well as pustules forming around hair follicles, may in certain instances become infected, but, in such cases, the first manifestation would probably not be at the bridge of the nose nor would the redness tend to spread so soon over the nose to the other side of the face.

The septum is the usual seat of nosebleed, ulcerations and perforations, and I think we may say without fear of being disputed that these lesions of the septum, especially erosions, are more common than all other lesions of the inside of the nose. If the septum is bent or irregular, or the mucous membrane atrophic, crusts form and are dislodged by the finger or by blowing, a raw surface is left and whatever enters the nose must pass this unprotected spot. The symptoms, other than profuse nosebleed, may be so insignificant that the patient is unaware that there is a very important lesion of the nose. No examination is made and the negative history causes the nose to be overlooked as a possible starting point of infection. If an examination is made when the erysipelas is well established the nostrils may be found inflamed and filled with secretions and crusts which are looked upon merely as a part of the disease, and no special attention is paid to anything but the outside of the nose.

If surgical erysipelas spreads from an external wound, proper cleansing and treatment of the wound itself are recognized as essential. The fact that erysipelas does not often result from surgical operations on the inside of the nose may perhaps be accounted for by the attention paid to the wound at the time of operation and its after-treatment, whereas in case of septal erosions the crusts may serve to hold the germ in contact with the wound and there is no free secretion to dilute it and wash it away.

The ethmoid region suggests itself as a possible starting point for erysipelas infection as being in close proximity to the part of the nose where the external redness commonly begins; but ethmoid disease is not nearly so common as are erosions of the septum and from its more protected situation is probably not so likely to furnish a favorable situation for the lodgment of germs other than those of influenza.

I was quite forcibly struck with the probable septal origin of a case of facial erysipelas in a lady seventy-five years of age whom I saw several years ago. I was called to see her in consultation on account of occasional spasm of the throat. There was nothing of importance found in the throat, but I made note of an erosion and crust of the septum in the right nostril. Two months later I was called again and found her with a temperature of 101°, headache, septum very red and swollen, and a decided erosion on the right side of the septum on which was some pus. The bridge of the nose on the right side was very red, tense and painful and the redness was spreading toward the cheek and eye. I removed the secretion from the nose and used antiseptic washes and powders as dressing for the wound. She had a bad night and the temperature the next morning was 103. She was mildly delirious and looked and was very ill. The erysipelas had spread to the other side of the face. The septum was again thoroughly cleansed, as well as every part of the nose, and her physician and nurse were most assiduous in seeing that the nose was kept free from secretion. The outlook seemed bad, but the next morning she was decidedly better and on the following day the conditions, local and general, had much improved and she was soon convalescent. Her physician agreed with me that the recognition and treatment of the intranasal condition were the important factors in preventing what looked like a fatal termination.

Miss L., forty years of age, had had a number of severe attacks of facial erysipelas at frequent intervals. She had a marked erosion of the septum which I treated. On one occasion the septum became reddened and there was beginning pain and redness of the bridge of the nose just as her former attacks had begun, according to her story. Thorough cleansing of the nose caused the symptoms to disappear in a short time and she went nine years without another attack, dying of renal disease.

Mr. A., fifty-two years, had a very severe attack of facial erysipelas. I examined his nose later and found a marked septal erosion with bloody crusts. On one occasion the nose became reddened on the outside, but treatment of the septum seemed to stop what the patient was very much afraid would be an attack similar to his former one.

These three patients had never complained of the nose sufficiently to lead them to have their

[1] Paper read at the Twenty-fifth Annual Congress of the American Laryngological Association, held at Washington, D. C., May 12–14, 1903.

noses examined, yet each had a large open wound at the time I saw them.

I am told that at the Massachusetts General Hospital all cases of facial erysipelas coming to the Department for Diseases of the Skin are referred to the Department for Diseases of the Nose and Throat for examination of the nose. Very possibly if this custom were more prevalent, cases of recurrent facial erysipelas might be much diminished in number.

Since the above was written I have seen a patient whom I treated three years ago for an erosion of the left side of the septum. For the four years preceding he had had repeated attacks of facial erysipelas, generally two or three times a year, beginning on the left side of the nose and extending to the hair. Since the treatment of his nose he has had no attack of erysipelas and his general health is better than for many years.

A CASE OF GUMMA OF THE FALLOPIAN TUBE.

BY GEORGE S. WHITESIDE, M.D., BOSTON,

Assistant Genito-Urinary Surgeon to the Boston Dispensary; Assistant in Anatomy in the Harvard Medical School.

About five years ago my attention was called to the subject of gummata of the uterine adnexa by reading a very suggestive little book called "Maternal Syphilis," by J. A. Shaw-Mackenzie.[1] Since that time I have been looking for cases, but in spite of having had the opportunity of examining a large number of syphilitic women, I have found but one, which I report below. I have not reported it before for two reasons — first, I wished, if possible, to collect other cases of a similar nature to put with it; second, I thought it advisable to wait, in order to make the report more valuable.

I have tried to look up the general subject of gummata of the tube, or syphilitic salpingitis, with comparatively poor success. The "American Year Book of Medicine and Surgery," from 1896 to 1903, inclusive, makes no mention of it.[2] The "American Textbook of Pathology" has four lines on the subject. It says, "Syphilitic salpingitis of the tube has very rarely been found in the syphilitic new-born infant, child or adult. The tube is enlarged, tortuous, inflamed, the lumen usually obliterated, and the muscularis infiltrated with masses of small round cells, — miliary gummas."[3] Taylor's "Venereal Diseases"[4] has not a very encouraging account. "Syphilitic affections of the ovaries are rarely met with. According to Lancereaux, they present a close analogy to syphilitic affections of the testicle, and are either diffuse or circumscribed. This author has only met with the diffuse form after it has arrived at the stage of atrophy; the ovaries were of the usual size or smaller than natural, fibrous in their structure, with scattered cicatrices, and destitute of Graafian vesicles, although the patients had not yet arrived at the usual age for the cessation of the menses. Lancereaux gives a representation of a case furnished by Dr. Richet, in which there was a circumscribed deposit of gummy material, similar to that found in syphilitic orchitis.

The symptoms of these affections are said to be a slight, dull pain in the region of the ovaries, possibly at the outset some increase in the size of these organs, perceptible on abdominal and vaginal palpation, a loss of sexual passion, and sterility. It is evident that these signs, taken in connection with the history of the case, can only furnish a probability of the nature of the disease, which may be further increased by the success of antisyphilitic treatment. No instance is known in which the Fallopian tubes have been affected with syphilis.

Certain cases in which uterine tumors in syphilitic subjects have yielded to the internal administration of iodine of potassium and mercurials render it probable that this organ is not exempt from the late manifestations of syphilis, but nothing more definite is known upon the subject, since post-mortem investigation has been wanting.

In Morrow we find:[5] "Syphilis in connection with these parts is almost unknown in literature, aside from a few random observations which mostly lack authenticity. Gynecologists apparently almost entirely leave it out of their calculations in the diagnosis of disease in this connection, and pathologists seem to have failed so far to find more than a few stray traces of its existence. Perhaps the ovaries are affected during secondary syphilis in a manner corresponding to the epididymis, but of this there could naturally be very little proof. Oftentimes women during the secondary stage of the disease suffer from functional disturbances in menstruation which are probably largely due to the general malaise associated with the early general symptoms; still, they may be in some measure dependent on local manifestations. The ovaries and tubes are rarely the seat of late syphilitic lesions of a gummatous nature. It has been questioned whether some of the sclerotic changes which are observed in connection with the ovarian connective tissues may not at times be due to syphilis, the same as in the testicle. This question has not as yet been settled, though it is very probable that some of these conditions are syphilitic in origin.

"Richet[6] records a well-authenticated case of gumma of the ovary. Lancereaux also has been quoted to have observed a well-defined tumor of the ovary which disappeared speedily after the introduction of antisyphilitic treatment.

"A case of gummatous salpingitis has been put on record by Bouchard and Lépine.[7] In this case both tubes were involved, and thickened to the diameter of the finger. On exposing them by means of an incision, three gummata about

[1] Maternal Syphilis. Shaw-Mackenzie. London, 1898.
[2] American Year Book of Medicine and Surgery. Gould.
[3] American Text Book of Pathology. Hektoen-Riesman. 1901. Pp. 1057.
[4] Venereal Diseases, by Robert W. Taylor. 1895.
[5] A System of Genito-Urinary Diseases, Syphilology and Dermatology. 1893. Vol. II, Syphilology, p. 463.
[6] Traité pratique d'anatom. Chir., fifth edition. p. 701.
[7] Gomme des Trompes. Gaz. Méd. de Paris, No. 41. 1866.

the size of a hazelnut were found connected with each tube. The canal was obliterated in each instance. Some time since I was called to treat a young woman of doubtful antecedents who announced that she had a pelvic inflammatory trouble, which was gradually getting worse in spite of the treatment she had received. Bimanual palpation disclosed in the region of the left broad ligament a tumor about the size of an orange, moderately tender. As she had already been under the treatment of a good gynecologist without favorable results, I put her on large doses of iodide of potash, although I could not obtain, notwithstanding the many opportunities she had apparently had for contracting the disease, a history of syphilis. The patient began immediately to improve, however, and after a time, the treatment being continued, the tumor gradually disappeared. Although this case does not absolutely prove syphilis of this region, still it justifies one in strongly suspecting that such was the case."

This case, reported briefly by Dr. Fuller, in Morrow's "System," is so much like my own that I will make no further apology for reporting my case, in spite of the fact that no absolutely irrefutable proof can be given that my case really was what I suppose it to have been.

Mrs. M. G., aged thirty-seven years, was referred to me June 14, 1899, by her family doctor. She had had eleven pregnancies; two miscarriages. She had a clear history of syphilis, dating back to 1894. Both miscarriages since that time. On Jan. 29, 1899, she gave birth to a stillborn fetus at or near term. Since that time she has menstruated as often as every two weeks, and recently, in June, 1899, "was flowing most of the time." Bimanual examination showed the uterus somewhat retroverted, slightly enlarged, freely movable. Tubes and ovaries apparently normal. June 21 I curetted the uterus. After-treatment consisted of corrosive douches, the administration of ergot and hydrastis. She menstruated July 20 and Aug. 17. When seen Nov. 7 she had not menstruated since Aug. 17. A probable diagnosis of pregnancy was made, and she was put on ten drops of a saturated solution of iodide of potassium, three times a day. Being anemic, she was given iron also. Fetal movements felt Dec. 24. Iodide of potassium continued. On May 1, 1900, after a normal labor, she was delivered without instruments, of a healthy child.

She came to me again Aug. 1, 1901, more than a year after the delivery of her child. She had been receiving no antisyphilitic treatment during the past year. She complained of pain, for two months past, in the right iliac fossa; worse at night. Some pain in back; headache; malaise. Too frequent and too profuse catamenia. Examination under ether showed on the right side a tumor the size of a large lemon, apparently the right Fallopian tube. She was ordered hot douches, rest, and the other usual remedies without success. She was averse to any surgical procedure, so in view of the history of syphilis, I thought it best to put her on a rigorous antisyphilitic mercurial and iodide treatment, in order, if possible, to absorb the tumor. I saw her at intervals of a week during the next two and a half months. Weekly examinations revealed the fact that the tumor was constantly growing smaller. An ether examination on Oct. 7, 1901, showed that the tumor had absolutely disappeared. During these ten weeks' treatment her symptoms had gradually improved, so that by the end of November, 1901, she considered herself well.

I saw her again in May, 1902, and in September, 1903. She has had no return of the tumor. With regard to the child born May, 1900, it lived about five months, never presenting symptoms of syphilis, but died of what I was told was broncho-pneumonia. I did not see the child myself. Autopsy refused.

This case is very similar to the one above quoted by Fuller, except that in his case the history of syphilis is less clear, and his was not preceded by a pregnancy. It seems unlikely, in this case, that the tumor of the tube should have been ordinary pyosalpinx. A normal labor with normal convalescence, an interval of a year of fairly good health, and complete disappearance of the tumor under antisyphilitic treatment, also the fact that two years have passed since that time and no recurrence has taken place, make it seem probable that this tumor was a gumma of the Fallopian tube. I report this case with the hope that it may call the attention of other physicians, particularly syphilographers and gynecologists, to the occasional possibility of the occurrence of syphilitic salpingitis.

THE INDOL OF THE FECES AS A MEASURE OF PUTREFACTIVE PROCESSES IN THE INTESTINES.

A. E. AUSTIN, M.D., BOSTON.

From the Medical Chemistry Laboratory, Tufts College.

FOR many years the measure of albuminous decomposition in the intestinal tract has been the amount of indican and ethereal sulphates in the urine, but this has led to many errors because it is a measure, not of this process, but of the completeness of the absorption of its products. We have only to cite, in illustration of this, the fact that a marked indicanuria may disappear when constipation, or normal stool, is replaced by diarrhea, or when laxatives are used; and further examination will show that while the aromatic products are diminished, they are still present, lessened only by the shorter stay of the fecal matter in the intestine. For the extent of this putrefactive process many causes have been assigned; atony of the intestines has been given as one by Rosenheim, which may, or may not, be associated with constipation, for many have daily stools and still an enormous indicanuria: this condition may also be associated with an ileo-colitis of so-called catarrhal nature with large amounts of mucin in the feces which may be due to these presumably irritating products, or may be the cause of them by production of the atony. The lack of free hydrochloric acid in the gastric juice has also been given as a cause, though, as will be shown later, it is very doubtful how much influence a small or large amount of this acid, necessarily neutralized after entering the intestine, may have upon this condition unless, as I have suspected, the excessively acid stomach contents in hyperchlorhydria may produce the chronic enteritis and hence the atony. Von Noorden,[1] who found no increase of the ethereal sulphates when hydrochloric acid in the stomach was

[1] Zeit f. klin. Med., 1890, 530.

wanting, says that "the stomach acid exerts no influence beyond the limits of that organ, and especially has nothing to do with intestinal disinfection." Deficiency of bile has been given as a cause, not because of its disinfecting properties, but because it stimulates intestinal peristalsis. Of this I have seen one case, not given here, which soon afterwards developed jaundice and was operated for gallstones, which were found; and one other, given in the list following, which was also operated, but in which they were not found, though the gall bladder was everywhere adherent. Deficiency of pancreatic juice is also given, and one of the following cases suffered from that, if one can judge from the mass of undigested muscle fibers present in the feces. As a last cause for the appearance of indol in the urine, Blumenthal and Rosenfeld have given the breaking down of cell tissue in fasting and severe organic diseases like cancer, pernicious anemia, etc.; this point, however, still remains *sud judice*, and it has not yet been positively proven that indol does persist, in death from starvation, to the end. When my work was begun, the Ehrlich dimethylamidobenzaldehyde reaction for indol in the feces had not come to my attention and so the older and more cumbersome method of extraction and weighing was used. Among the products of this putrefaction other than indol are skatol which, according to Baumstark,[2] is so vastly less than indol that it is of only the slightest importance; phenol. which, according to Strauss and Philippson,[3] was missed in the urine of over half their cases and which I could never find in sufficient quantity in a day's feces for estimation, though traces could always be found with Millon's reagent; and sulphuretted hydrogen, which Albu[4] says, varies so that no distinct conclusions could be drawn from its presence. For this reason I neglected all the aromatic products except indol. Since in conjunction with the indicanuria which was present in every case, calcium oxalate was present as a sediment in all the urines, and since Soetbeer and Krieger[5] have ascribed phosphaturia (phosphate of calcium) to catarrh of the colon, a quantitative estimation of the calcium in the feces of every case was made in order to determine whether absorption of indol or conversely, elimination of the calcium salt, was affected, since these authors claim that the normal eliminative powers of the colon for this salt are impaired in catarrh and an excess appears in urine. In most of the cases the nitrogen of the feces was also determined, since with a mixed diet a large elimination of nitrogen in the feces might indicate an impaired absorption or an increased motility, which was not present in any of the cases, or, at least, there was no diarrhea.

The method employed for determination of the indol, phenol, etc., was that given by Schmidt and Strassburger[6] and is as follows: The day's feces was first weighed and a portion weighed out for the determination of the water, which portion was afterwards destroyed for determination of the lime. Another portion was weighed out for the nitrogen estimation, and the remainder mixed with water until it formed a thin, soupy-like mixture and then one third distilled off; this distillate was then made alkaline with sodium carbonate to hold the fatty acids and a second distillate was made; this distillate was then made strongly alkaline to hold the phenol in check and distilled with steam as long as any indol was found to go over, which was easily seen by its floating on the top of the water; in order to remove those portions which clung to the distilling tube, ether was added to the last solution and its vapor dissolved out all the indol and carried it to the flask lying before the condenser. This watery solution of indol (and skatol) was repeatedly shaken with ether, the ether distilled until some began to fall out of solution and then allowed to evaporate spontaneously in a weighed beaker, dried in a vacuum over sulphuric acid and weighed. The solution from which the indol had been removed was then strongly acidified and distilled as long as Millon's reagent gave any reaction. Owing to the almost entire absence of phenol and fearing that it was escaping, the most of these distillations were made into bromine water. The portions of feces used for calcium determination were simply destroyed by the blast lamp and the ash extracted with acidulated water and the substance weighed as calcium oxyd. Before proceeding to a discussion of results, a brief *résumé* of the chemical features of the cases and amounts of the different substances under consideration is given as follows:

Case I. Stomach contents one hour after test breakfast: amount, 200 c.c., no free hydrochloric acid, lactic acid abundant, rennin present, 1:160, total acidity, 52; combined hydrochloric .51 per thousand; abundant sarcinæ ventriculi.

Feces, — amount twenty-four hours, mixed diet, 183.2 gms., numerous muscle fibers, a great many fat globules (Sudan III) and numerous shreds of mucus (colon washing always produced great masses of mucous shreds). The amount of indol found was .022 gms. and the urine showed a marked indican reaction as well as reduction (glycuronic acid).

Case II. Stomach contents, amount, 29 c.c. Total acidity, 84; free hydrochloric acid, 2.06, total hydrochloric, 2.48; erythrodextrin. Feces, amount twenty-four hours, 64.5 gms, dried residue, 20.19% or 13.0 gms. Large number muscle fibers, no fat, no starch, large number mucous shreds containing epithelial cells (shreds numerous with colon washing), no bilirubin, total nitrogen, .778 gms. (average of two estimations); indol and skatol, .280 gms.; phenol, mere trace; calcium oxyd, .341 gms.

Case III. Stomach contents, amount, 30 c.c. Total acidity, 48; free hydrochloric acid, 1.24; total hydrochloric, 1.75; lactic acid, trace. Feces, amount, 42.2 for twenty-four hours, muscle fibers very numerous, many needles of fatty acids, some mucous shreds; dried feces, 28.66%, or 12.09 gms.; nitrogen, .738 gms. (an average of two estimations); calcium oxyd, .464 gms., indol and skatol, .0568 gms.

Case IV. Stomach contents, amount, 100 c.c. Total acidity, 126; free hydrochloric, 3.12; total hydrochloric, 4.21. Erythrodextrin. Feces, amount, 99.2 gms., few muscle fibers, some connective tissue, no fat, hydrobili-

[2] Archiv f. Verdauungs-krankheiten ix, 207.
[3] Zeit. f. klin. Medicin, xl, 369.
[4] Deutsch. Med. Wochr., xxx, 958.
[5] Deutsch. Archiv f. klin. Med., 72, 5 and 6.
[6] Die Feces des Menschen, 136.

rubin. Dried feces, 23.6% or 23.41 gms.; total nitrogen (average of two estimations), 1.24 gms.; indol, .260 gms.; calcium oxyd, 1.19 gms.

CASE V. Stomach contents, amount, 48 c.c. Total acidity, 53. Free hydrochloric, 1.56; total hydrochloric, 1.85; trace of lactic acid. Feces; these were not weighed because obtained by means of an injection; no muscle fibers and no starch granules, numerous shreds of mucus, some with cells adherent; no fat. Indol in one day's feces amounted to .160 gms. Urine had a large amount of indican, and oxalates.

CASE VI. Stomach contents, amount, 140 c.c. No free hydrochloric. Total acidity, 6. Rennin, 1.80; total (combined) hydrochloric, .073; lactic acid present. Feces, amount 66.2 gms.; no muscle fibers; abundant fatty acid needles and fat globules; numerous mucus shreds (shreds also on colon washing); dried feces, 25.5% or 16.881 gms.; total nitrogen, .794 gms.; indol, .244 gms.; calcium oxyd, .549 gms.; urine showed a large amount of indican and urobilin. This is the case afterwards operated on my advice and that of others, by Dr. Brewster, for gallstones, but none were found.

All of these cases were regarded clinically as so-called chronic catarrhal colitis, or ileo-colitis, of which mucous colitis or ileo-colitis seems, from descriptions of others, to be a similar term. The term colitis was added when, in addition to the presence of large numbers of muscle fibers and bilirubin-stained shreds of mucus, similar shreds could be obtained in profusion by colon washing.

The stomach functions were examined secondarily as a means of determining what effect, if any, the contents which were passed into the intestinal tract had upon its condition. With reference to its secretion of hydrochloric acid, we may regard cases III and V, with elimination of 56 and 160 mgms. of indol, as normal; II and IV, with 280 and 260 mgms., as hyperchlohydrias; and I and VI, with 22 and 244 mgms, as hypochlohydrias; from this we should be compelled to say that the amount of acid in the stomach had little or no effect upon the formation of indol, as would be expected from the fact that most of the bacterial action takes place below the ileo-cecal valve, where the reaction is alkaline and all the acid formed has been neutralized.

With reference to motility of the stomach, judged from the amount withdrawn, it is evident that all are normal, having from 56 to 280 mgms., with the exception of I, having 22 and possibly IV, having 244 mgms., so that if the indol depends on motility, as is quite evident, impaired motility of the intestine is not necessarily associated with a similar condition of the stomach. With reference to absorption in the small intestine, by which the albuminous food is protected from the ravages of these micro-organisms throughout the colon, if we may judge from the nitrogenous waste, an inference that is only approximate, owing to the varied origin of this element and the difference in the digestibility and amount of foods, we have the lowest nitrogenous waste; .378 gms. with .056 indol, and the highest, 1.24 gms. with .260 indol, so that evidently no connection exists.

With reference to the amount of moisture in the feces, an increase of which is supposed to facilitate the growth of germs and hence the formation of indol, we find with varying moistures of 79.81%, 76.4%, 74.5% and 71.34%, 280, 260, 244 and 56 mgms. indol. There may be some connection in this instance, though the cases are too few to put much dependence upon it. According to Grundzach,[7] the average amount of calcium oxyd eliminated daily with a mixed diet is 1.316 gms. and in comparison with that, except Case IV, there was a marked diminution in the amount of lime eliminated by the intestine, and as before stated, if absorption follows elimination in its impairment it may account for the large amount of indol found, as well as the fact that calcium oxalate crystals were found in all the urines of these individuals, due, not to the increase in oxalic acid, but to the increased amount of lime in the urine which failed of elimination by the intestine.

The amount of indol found is vastly greater than that found by Baumstark, already quoted, who regarded 17 mgms. as an average normal quantity in the day's stool and whose greatest amount in a pathological condition (Achylia gastrica) was 114 mgms. My much larger amounts may be due to the fact that the skatol was reckoned with it; of their purity there could be no question, both from the method by which they were obtained, excluding all other products, as well as from their well-defined crystalline form, and the response of the one (indol) to Legal's reaction.

My inability to find phenol in weighable quantities can only be explained by the fact that it is absorbed and oxidized, for it is always difficult to find it in the urine, unless ingested in more than mere traces. Yet this substance is very prominent among those produced by a spontaneous putrefaction of albuminous material, and Simnitzki[8] found as high as .68% of the decomposed albumen in the form of phenol, keeping close to the amount of indol and sometimes exceeding it.

WAS HE INSANE? A STUDY IN MENTAL DIAGNOSIS.[1]

BY C. A. DREW, M.D., BRIDGEWATER, MASS.,

Medical Director Massachusetts State Asylum for Insane Criminals.

(Concluded from No. 24, p. 645.)

ANOTHER letter to his wife, throwing light on his mental content in an angry mood, was as follows:

APRIL 10, 1902.

Written under duress.

ORDERS.

To MRS. G. B. — (1) You are hereby ordered and directed by me, your lawful husband, to bring any money you may receive from Mrs. C. B., my mother, or from any party or parties on my behalf, to the above lunatic asylum and to deliver the same intact to me, and you are forbidden to remit by mail any money to me or deliver any money to Dr. Drew or any person or persons on my behalf. You are ordered to come yourself or send

[7] Zeit. f. klin. Med., 23, pp. 70.
[8] Zeit. f. physiol. Chemie, 39.99.
[1] Read before the Plymouth District Medical Society, April 15, 1903.

Queenie G. B., my daughter, with the said money, but not to entrust the same to any other person or persons.

(2) You are ordered to cause Queenie G. B. and Clarence W. B., my children to write to me forthwith and to have the letters here by Saturday, April 12, 1902.

(3) You are ordered to go to the State Board of Lunacy at once and make a legal demand for the father of your children's immediate release from unlawful custody.

(Signed) H. J. B.

A copy of the above orders has been sent to my attorney, Mr. Fishacher, Esq.

The foolish arrogance of these "Orders" might come from a paranoiac or an imbecile, but the paranoiac, if educated, has commonly more sense than to write such stuff to any one. The following explains itself:

FEBRUARY 21, 1902.

To the Manager of the Pinkerton Detective Agency, Boston, Mass.:

Dear Sir, — Upon receipt of this letter please send a reliable, trustworthy and shrewd dectective to see me. Tell him to bring blank drafts with him. I was robbed and unjustly sentenced to Massachusetts state prison and two months before the expiration of the sentence two unscrupulous quack doctors have conspired with officials and railroaded me to a lunatic asylum. I complain of foul play. I will not write full particulars, but will explain fully to your man. I have received a cable message from my mother in London, England, and my friends will be here soon. I am engaging reputable lawyers to reopen my case and to get an investigation. I am a lawyer. I have startling disclosures to make to your agent. Please make your charges as reasonable as possible and remember I am an attorney and may need you for many cases. Send your man at once and on his arrival I will pay him a good substantial fee. I have powerful friends. I have been sent to an asylum to save the officials from exposure, etc. Foul play. I cannot send any remittance by mail, as I do not want any one to know who I am drawing on or where my money is, owing to the trustee and attachment law being so strict in this state, and as I have legal trouble with my wife and she is looking to get alimony and to attach my properties, etc., and the officials here would know where cash is if I drew through them, as I should have to get a draft from them. Send good man with blank drafts. I will pay his fare and all expenses. Send as quickly as possible and be sure he sees me and tell him to be silent as to who he is. I need your man to hunt up evidence, etc.

Yours respectfully,

(Signed) H. J. B.

This letter to the Pinkerton agency, it may be noted, mentioning "legal trouble with my wife," antedated his loving letter of March 12 by eighteen days. He would not forget to write "bring blank drafts" in each of his many letters to lawyers, evidently thinking this suggestion best calculated to bring the lawyers quickly, and usually in his letters to the latter he promised payment in full for past services. When one lawyer came to see him, our patient did use the blank drafts brought as suggested, but he drew on another lawyer with whom he had formerly been on a friendly footing. This lawyer friend had also been promised full payment if he would come from New York city to co-operate with Massachusetts attorneys to obtain our patient's release. He had also been admonished to bring blank drafts. This New York attorney was evidently slightly indignant to find that our patient had drawn on him in favor of another lawyer. Some letters were exchanged, which we did not see, the Boston lawyer, who was paid by drafts on the New York attorney, acting as mail carrier for our patient. The following letter was written to the New York lawyer, in reply, evidently, to a sharp letter from the latter, who had discovered that his sometime friend, our patient, was not acting on the square with him. It reads as follows:

MARCH 27, 1902.

My dear Dave: Your letter duly received and contents noted. Your extraordinary epistle and the peculiar tone and indignant manner in which you write can only be appreciated by me, as I understand you are a fighter and an indomitable "toner," and I verily believe you would rather fight than eat and your bickering and quarreling with me, your own client, is proof to me that you are a very eccentric attorney in some small matters, but with all thy faults I love thee still, and look upon you as the faithful "wondertoar" young and reliable checkmating general that you always were. I mean you to try to checkmate my enemies in a legal manner. Let me explain a little. The fact that you say you never received a pawn ticket for ring and stud shows me that you have never received it, but I solemnly declare that I delivered it to the prison officials with a letter addressed to you, stating that the ring and stud had nearly run out and sent it to you as a present if it would be any use to you. This is over four years ago, and if you have never received it, then it only adds one more crime and felony to the list to be laid at the door of the unscrupulous prison officials and I am not to blame and you are not to be blamed. . . . Now let it be distinctly understood that I am not blaming you in any matters, but merely wrote you the other day because Mr. Bruorton stated that he had received a letter from you and that you asked him to go to the asylum and find out if I had the money to send to you for expenses and that you would have the affidavit drawn and sworn to if he desired you to do so, and Mr. Bruorton stated that he wrote you that you could use your own judgment as to the affidavit, but would not be responsible for the costs or for your expenses or for any work you might do for me. Upon receiving such a letter I immediately wrote to you to look at the past, etc., as I think, in view of the past and taking into consideration that I owe you nothing and that I have always faithfully and honestly remunerated you for your services that, to an old client, you need not be so particular and parsimoniously inclined. Mr. Fishacher, a Boston lawyer, was here yesterday with my wife and she stayed all day and dined with me. I delivered a letter to my wife to have registered a draft, etc., to you. Please come on and see this man at once on receipt of the cash from his brother. His brother's address is on the draft. In the meantime if any money arrives, I shall telegraph you $50, as I did before through the Western Union Co., as I have received a heartrending letter on Monday from my father and mother who state they are sending me money. Have faith in me, my brave legal warrior, and be patient and do not write recriminating epistles acting as an injured man when you are not. You have a peculiar faculty for quarreling. Do you remember the order of Judge Newberger dangling in mid-air and Judge Pratt's stays (while you wait) and the conflicting orders and toners moving mysteriously as if by peculiar power and severance, supplementary orders and referee Hess and referee Stein being removed. Dangerous on the other side. Look out, I am coming soon. I rest my case.

Your affectionate friend and client,

(Signed) H. J. B.

P. S. — Write soon.

It would seem, on the face of it, that a lawyer who would try to work the confidence game on his professional brothers must be very insane and it ought to be known in this connection that most of the attorneys to whom our patient wrote either did not notice his letter or else inquired by telephone or letter of the asylum officials concerning patient. Attorney Fishacher knew

the man and was trying to serve him, for his family's sake, in an ethical and honorable way. Another Boston attorney seemed to swallow his bait whole, made frequent trips to the State Farm, came and went, as a rule, without consulting with the asylum officials, until he obtained our patient's draft for $1,800: $300 for himself and $1,500 for a New York law firm as whose agent he professed to be acting. After this his visits were infrequent and we do not know how much he realized on those drafts, nor how he felt when he heard from that New York attorney on whom the drafts were drawn, and whom our patient addressed as " My dear Dave."

The conclusion was forced upon us that our patient was not a true paranoiac, or monomaniac. I will admit that, using the term paranoia in its broadest generic sense, it may include most kinds of mental deficiency outside of dementia, paralytica and the acute psychoses embraced by the manic-depressive syndrome. I do not forget that Dercum [2] and others would include under paranoia all cases of chronic systematized delusional insanity, and that Ziehen writes of stuperous and incoherent paranoia. Dercum's classification seems eminently rational and helpful, if we agree as to the limitation of terms, but we hold that our patient's so-called delusions had not the true ring, and to speak of " stuperous " and " incoherent " paranoia is, seemingly, to confuse paranoia with dementia precox, or a toxic insanity with confusion, else to give a class name to a late and unusual phase of a disease. We believe the phrase " constitutional inferiority with moral perversion " best covers our patient's abnormality. The direct question, " Was he insane? " cannot be properly answered by " yes " or " no." There is no doubt but that he knew the difference between right and wrong in the abstract, and with reference to every dishonest act he did, but this could be said of almost all paranoiacs. The weight of evidence seems to show that he could act or refrain from acting according to his judgment of which was the best policy. The fatuous folly of his judgments is beyond dispute. Insincerity, duplicity and mendacity were characteristics evidenced at every interview and in every letter he wrote. To the governor and the British consul his letters were couched in technical and well-turned phrases. To the lawyers he emphasized the fact of his being a Jew and of having powerful friends and rich relatives. To these, he wrote of being robbed and illegally sent to an insane asylum, but to his mother he wrote very little about being robbed. To her he cried " I am hungry and abused. Help! Help! I shriek a sane man from a madhouse! " We know this was not delirium. It was carefully penned, — all the exclamation points were in place. The motive was, manifestly, to touch the maternal heart, to work on the mother's nerves that she should send more gelt quickly. There was just a little basis for his claims of being robbed, but not by any prison official. A certain New York lawyer had obtained money from patient's mother, more than one hundred pounds, ostensibly for her son's defence. There was an effort to get more money, as the attorney's letters, which the mother forwarded, plainly evidenced. Our patient knew this, but it suited his purpose to make charges against state officials, because these charges received attention. To charge lawyers with getting money from his mother by misrepresenting the case would avail him nothing. People would laugh at that. May I requote a few significant lines to " Dear Dave," who resented being drawn on in favor of the Boston lawyer? " I verily believe," H. J. B. writes, " you would rather fight than eat and your bickering with me, your own client, is proof to me that you are a very eccentric attorney in some small matters, but with all thy faults I love thee still." This illustrates our patient's cleverness at cajolery and counts against paranoia, because a sense of humor is almost as rare to the paranoiac as a sense of honor is to the moral imbecile. It is difficult to conceive of a true paranoiac " jollying " another about anything.

The more we studied our patient, the more it seemed to be true that his mistrust of every one — his " delusions " if you please — were not the delusions of psycho-pathology, but rather false beliefs based on his peculiar experiences and his own self-consciousness. He had little knowledge of the reactions of an honest man's mind. The altruistic sense and the sense of honor were rudimentary, but these are the products of man's higher evolution and are probably rudimentary in most habitual and instinctive criminals. The primordial instincts of self-preservation and love of offspring seemed fairly developed, albeit his faulty judgments and ignorance of men and institutions as they are made his foolish pertinacity in wrongdoing seem suicidal. Read " Hard Cash," by Charles Reade. he would urge, in defence of his ideas. " Hard Cash " had apparently shaped our patient's beliefs and destiny in more than one sense. After we had studied H. J. B. for more than three months, I advised that he be returned to the prison from which he was committed. He was accordingly returned to prison, as per Section 101, Chap. 225, of the Revised Laws of Massachusetts, and held for about seven months, during which time there was no essential change in his condition. Early in December his mother came from England and was allowed to take her son, as his minimum sentence had expired. We were informed by the prison physician that his mother insisted to H. J. B. that she had all the legal knowledge necessary to free him and would not allow him to talk. " She was the only mortal able to control him in this respect," the physician added. It was understood that his mother proposed taking our hero to South Africa. The inference was not that the talented mother bore malice against that unhappy land, — rather that no indictment stood against our sometime patient there.

" If this man should kill some one would you hold him responsible? " was pertinently asked

by a physician whom I advised of my purpose to recommend the return of H. J. B. to prison. Being persuaded that there was no pathological condition present that would compel him to commit a homicide, I would hold him responsible as I would hold another weak-minded brother responsible. Not absolutely responsible, in a moral sense, nor entirely irresponsible, as the man suffering from brain disease, but sufficiently responsible to be kept in prison. Too much responsible to be allowed to prey on the truly insane. It is true that graded responsibility is debatable in medicine and not recognized by the courts, but we are not entirely responsible for the defects of the courts. The natural instinct of civilized man is to save life — his own first, then others. This order may even be reversed, in the highest types, in favor of the nearest and dearest by ties of blood. So it is that the instinct to kill is against nature and raises the presumption of psycho-pathology. The acquisitive instinct, on the other hand, is according to nature, and an exaggeration of this instinct is presumptive evidence only of moral deficiency, even to the making of a " common and notorious thief." We do not know that H. J. B. had any impulse to kill or do bodily injury to any one. His mother's testimony was to the contrary. Moral imbeciles are often exceedingly cruel and enjoy beating, cutting and killing for its own sake or for the sexual frenzy excited most intensely, — so to speak, — by the taste or smell of blood. Dr. Howard's heroine (?) Mizpra [3] was considered entirely irresponsible, possibly so from a purely academic viewpoint. It is doubtful if the courts would support the contention, and practical psychiatry might classify the case as not amendable by hospital methods. It was very clever of the author, therefore, to have Mizpra hurled into a yawning abyss before she reached an insane asylum.

To glance again at the mother's analysis of H. J. B.'s case, is it not reasonable to assume that the man's objective mind was in abeyance, that the subjective mind held supreme sway, forcing the individual on in his irrational course " as fatally as the moth flies in the flame "? Was his oft-declared purpose to fight his enemies in the courts — to " pursue them with the dog whip of the law and hang them on the gibbet of public opinion," a manifestation of the " one grim resolve, the *idée fixé* of the monomaniac "? Concerning the subjective mind hypothesis, a review of much of Thomas Hudson's [4] dual mind thesis would be needed for an adequate consideration of this phase of the subject. I will only observe that if the " subjective mind " is identical with an immortal soul, as Hudson holds, and is responsible for the atrocious acts of some persons on this planet, then the ancient theological conception of an unquenchable lake of burning brimstone seems to have a justification. As to our patient's passion for litigation being the fixed idea of a monomaniac, much more might be said than time will allow. A love of litigation may be but a manifestation of a quarrelsome disposition which, unfortunately, is not limited to the insane. So far as it is an evidence of insanity, it points to imbecility quite as much as to paranoia. The same may be said of inordinate vanity and love of notoriety which is nourished by the publicity of the courts. H. J. B. might have engaged and discharged a dozen lawyers while in prison for the mere love and excitement of it. It is probable that he did not intend to pay any one of them, except by promises or bogus drafts. Experience had taught him that letters to lawyers and state officials were forwarded. He was a forceful writer and a ready talker and loved to do both. Most of all he longed to get into court to show off his talents before newspaper reporters and a crowd. When pressed on cross examination, concerning the false charges he was reiterating against the prison officials, he once declared doggedly, " A man has a right to defend himself." This was the key to many of his " delusions," — created for a purpose. He believed all men to be dishonest tricksters, — this was a natural subjective reflection, — and he was doubtless disgusted to find so many lawyers who did not think as he did. Life in " Cherry Hill" was rather monotonous; why shouldn't he keep on engaging attorneys till he found one of his own kind, who would help him into court or get his letters published in the sensational newspapers? He was stubborn and opinionated — like many weak-minded men, and some others. His little knowledge of the law puffed him up and made him intolerant of advice, but he was not dominated by " one grim purpose." On the contrary, he was vacillating as most men, at least. To-day he knew his wife was true and loyal; to-morrow he was sure she could not be trusted in anything. This week he was willing to follow the advice of his mother and attorney Fishacher; the next week his only reliable legal adviser was the Boston attorney who was paid by drafts on the lawyer in New York. It does not seem wise to generalize broadly about these mentally inferior and morally perverted ones. Each case must be decided on its own merits. One might strongly defend the postulate that all instinctive and incorrigible criminals are insane, but practical considerations would forbid that these mingle with those suffering from brain disease. Indeed, the doctrine of limited responsibility is not incompatible with the administration of a modern humanely managed prison, and it ought to be known that the isolation building for incorrigibles called " Cherry Hill," at Charlestown, has very large rooms, larger than any single rooms I know of in an insane hospital, well ventilated and well lighted through the roof, with good plumbing, running water and a good bed in each room. Humanity has a right to expect similar provisions in each penal institution, for the line of demarkation between sanity and insanity is particularly shadowy in the criminal classes and it is better that asylum features be introduced into prisons than that the hospital and asylum standards should be lowered by prison necessities.

I would express the opinion, in closing, that the committing physicians were fully justified in giving H. J. B. the benefit of every doubt. They were supported, too, in the diagnosis of "litigious paranoia" by the teachings of some of the best authorities. My specified and implied reasons against the diagnosis run through this essay. I will only repeat that while paranoia and constitutional inferiority with moral perversion (moral imbecility) have much in common, may indeed be well called "first cousins," they ought to be separated clinically as readily as hereditary ataxia and locomotor ataxia are recognized as distinct disease forms. The parallel would not hold as to anatomical pathology, because these spinal degenerations have a clearly defined and well-known pathology, but that paranoia is a veritable psychical disease entity is evidenced by its distinct and fairly uniform stadia. It is essentially progressive, even though chronic, characterized by systematized delusions and hallucinations, especially of hearing, in the majority of cases. The systematic evolution, the distinct period of introspection and depression, followed by a period of delusional exegesis of his own morbid subjectivity, and the hallucinations which may begin to spur him on, followed again by an expansive and ambitious period, with its change of personality, — these are the landmarks by which we may know the true paranoiac. The moral imbecile is not so. He has false beliefs enough, certainly, but they change "with every wind of doctrine," like ordinary weak mortals. He has no period of depressive introspection. What little sense and judgment he has he keeps to the end of the chapter, barring the ordinary wear which all flesh is heir to. It is true that the moral imbecile may be far below the intellectual plane of the paranoiac — the differential diagnosis does not rest on the degree of mental defect. That the imbecile may be so defective as to be wholly irresponsible goes without saying. But call his condition "moral insanity," "the insanity of degenerates" or 'phrenasthenia," if you please, yet, in the absence of substantial evidence of brain disease, the natural criminal product of a neurotic organization and a wrong education hardly fits the legal conception of insanity. When the impulse of the perverted imbecile is towards rape and murder, as it so often is, the common conception of insanity should be strenuously opposed before opening the asylum doors to let the perverted one free, but when inordinate vanity and infantile judgment leads the individual habitually to seek gratification in the publicity of the courts, the hospital physician's duty to society may not necessitate a rigid adherence to medical as against legal conceptions of responsibility.[5] As the morbid man bent on suicide by hanging hardly ever shoots himself, so the imbecile seeking gratification through the courts rarely gratifies his unreasoning anger by personal violence to the object of his spite. Therefore it is that the weak-minded litigationist may be less harmful at large than among the insane, — than among other insane, if you choose to have it so expressed.

NOTE. — Several weeks after this paper was written, and less than five months after our hero was released on parole from the State Prison, letters began to come from H. J. B. from New York City, — registered letters, some of them, — notifying the asylum officials that legal proceedings were about to be begun for the release of several inmates of the Massachusetts State Asylum for Insane Criminals. Letters came from other counsellors at law in the same tone and spirit, giving notice of legal proceedings about to begin, "having been retained by Mr. H. J. B., etc." From these letters and other sources we learned that H. J. B. was "highly prosperous," "working night and day," "employing several lawyers," "supported by the most prominent people in our city (New York) who speak in the highest terms of his (H. J. B.'s) indomitable business acumen, responsibility and strict honesty." One of these assistant counsellors at law, H. J. B.'s "brave legal warrior," "dear Dave," subsequently came on from New York City, demanding to see certain patients in the name of H. J. B. and the Constitution of the United States. "Dear Dave" brought two baskets of fruit to asylum patients who had been wheedled out of their small supplies of delicacies for the benefit and promised favor of H.J.B., then "under duress," when he should have his "enemies" (?) figuratively on their knees before him. I wish to record this because it seems, on its face, an honest act and a promise kept. So far as it goes it indicates sincerity, and any evidence of sincerity, considered in relation to H. J. B.'s history, would strengthen the hypothesis of insanity. It seems that H. J. B. did not go to South Africa. His mother, we understand, settled the indictments against him in New York and there is evidence that his "indomitable business acumen" has been exercised on as high a plane as the "promoting" and "floating" of the "Iowa Pacific Railway" and the "International Cable Co."

[5] Peterson's brief and flexible definition of insanity — as good as any — reads, "Insanity is a manifestation in language or conduct of disease or defect of the brain."

Clinical Department.

DOUBLE CHOPART AMPUTATION.

BY CHARLES A. POWERS, M.D., DENVER, COLO.,

Surgeon to St. Luke's Hospital, Denver.

THE Chopart amputation has not borne a very good reputation. Its status in this country is expressed by Bryant,[1] who says:

"This operation is objectionable on account of the liability of the stump to become extended, causing the patient to walk on the cicatrix at the anterior extremity. The division of the

[1] Operative Surgery, Vol. I, Third edition, 1899, p. 449.

tendo Achillis during or subsequent to the operation is practiced to counteract this tendency, but frequently without permanent success. If the stump be confined in a flexed position during the healing, and for a time afterward, there is less danger of this annoying sequel. No preventive expedient addressed to this sequel has as yet afforded the patient practical immunity. The operation cannot be recommended as a substitute for those that are to follow in point of comfort and usefulness. Better service is secured with an artificial appliance after the Syme amputation than after Chopart's."

Such an opinion by a surgeon of the mature judgment and wide experience of Bryant must carry great weight. In England Jacobson and Steward [2] say, " The value of the operation has been a good deal disputed." The following objections have been raised to it:

(1) That the tendo Achillis, no longer counterbalanced by the extensor muscles, which have not lost their attachment, draws up the heel, tilting down the scar, which now becomes tender and irritable. (2) In the normal foot the weight of the body is transmitted through the astragalus to the other bones of the tarsus and metatarsus. When, as in this amputation, these bones have been removed the weight of the body tends to thrust forward the astragalus, no longer supported by the elastic bones in front, against the scar and thus renders this tender and crippling. The above objections apply to the operation performed for injury or disease, the next to amputation for the latter only. (3) If the operation be made use of in caries, this disease is likely to recur in the two bones left. In answer to the first two of the above objections it may be said that this tendency to tilting upwards of the heel and downwards of the scar may be met: (*a*) By stitching the anterior tendons — *e. g.*, tibialis anticus, extensor proprius pollicis, and some of the tendons of the extensor communis — into the tissues of the sole-flap with stout carbolized silk or chromic gut, so as to give them a fixed point by which they may counterbalance the tendo Achillis; (*b*) by cutting the plantar flap sufficiently long, and securing firm primary union; (*c*) by division of the tendo Achillis. (This, however, is only of fugitive value); (*d*) wearing a wedge-shaped pad in the boot; (*e*) preserving the scaphoid, when sound, so as to retain the attachment of the tibialis posticus."

Mr. Jacobson attributes the stitching of the anterior tendons into the tissues of the sole-flap to Mr. Delegarde of Exeter. He says that until it is more frequently made use of and a larger number of cases are collected the value of this amputation must remain somewhat undecided. He had taken this precaution of stitching the anterior tendons on five occasions and says that the stumps proved sound and useful.

As a minor contribution to the subject the following case is reported. Three years have

[2] The Operations of Surgery, Vol. ii, 1902, p. 713.

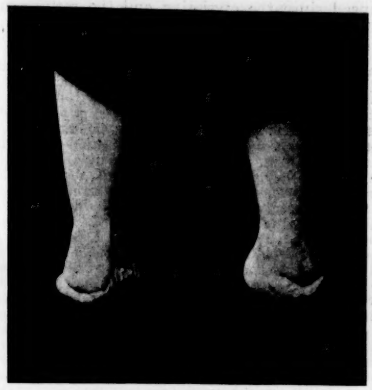


Fig. 1. Condition three years after operation.

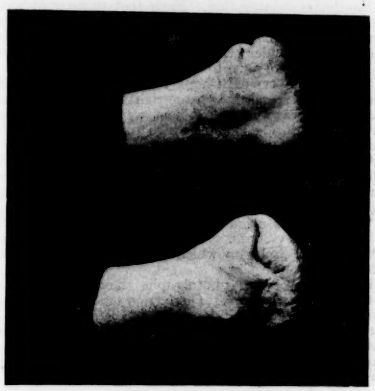


Fig. 2. Showing voluntary dorsal flexion.



Fig. 3. Showing voluntary plantar flexion.

elapsed since the operation and the result may be considered permanent.

Mrs. M., a woman of twenty-seven years, came under my care in March, 1900. She had been caught in a mountain blizzard one month before and obliged to remain all night in a deserted shanty; as a result both feet were frozen. When I saw her each foot was the seat of dry gangrene to a point a little behind the middle of the metatarsus. The gangrenous portion was black, the line of demarcation was well-formed, the two sides were nearly symmetrical. The tissue above the line of demarcation seemed to be healthy on each side.

Double amputation under ether at St. Luke's Hospital, March 17, 1900. On the right side disarticulation was made between the os calcis and scaphoid behind and the cuboid and cuneiform bones in front because here the anterior surface of the scaphoid was but slightly in advance of the anterior surface of the os calcis. On the left side there seemed to be a little more healthy tissue, so disarticulation was made between the cuboid and outer two metatarsal bones, sawing through the three cuneiform bones on a level with the anterior surface of the cuboid. On each side the tendo Achillis was divided and on the left side the anterior tendons were sewn to the face of the stump with chromicized catgut.

On each side the soft parts were divided pretty close to the line of demarcation. Each foot underwent moderate suppuration. On the right sides the flaps proved insufficient and the tarsal bones to the medio-tarsal joint were removed under ether ten days later. The anterior tendons were here sewn to the face of the stump.

This made a typical Chopart amputation on the left side and an atypical one on the right side where the scaphoid bone was left. Both feet were kept in marked dorsi-flexion during healing which took place largely by granulation.

At the end of five weeks both wounds were firm and a little later the patient began to get about, being instructed to massage and move the ankles morning and night. There was no posterior contraction. At the end of three months, aided by a cane she could walk fairly well in ordinary shoes. A little later she was provided with artificial limbs on which she gets about very well indeed.

The accompanying photographs show the condition at the end of two years. There is no tendency whatever to equinus. Voluntary dorsal flexion is excellent. Motion has somewhat increased during the past year. Function on the side on which the scaphoid was preserved is no better than in the stump from which it was removed.

I have no doubt that this woman's locomotion is easier than it would be with amputation at a higher point. She is pretty fat and is obliged to work about the house all day in caring for a large family of small children. She tells me that she can go up and down stairs pretty easily and that she can walk a long distance without fatigue.

On two other occasions I have made a single Chopart amputation. Neither case was followed long enough to judge of the end result, though in each instance the condition was satisfactory when the patient passed from observation. I believe that when the operation is made with a division of the tendo Achillis, suture of the anterior tendons to the face of the stump and placing of the remnant of the foot in marked dorsal flexion with careful attention to this position during healing, together with massage and ankle movements, especially those of dorsal flexion, afterward, the result in most instances should be as good as that presented here.

Medical Progress.

PROGRESS IN PATHOLOGY.

BY JOSEPH H. PRATT, M.D., BOSTON.

THE ETIOLOGY OF LEUKEMIA.

WALZ [1] has prepared a critical review of 223 articles upon leukemia which were published between 1894 and 1902. The section devoted to the etiology of the disease is especially interesting. The rapid course which acute leukemia runs certainly resembles that of an infectious disease. The tonsilitis which frequently accompanies acute leukemia or the ulcers in the intestine, described first by Askanazy,[2] might well serve as portals of entry for the infectious agent. Walz states that Cabot [3] has reported a case of apparently direct transmission of the disease from patient to nurse, and there is a similar oft-cited observation by Obrastzow.

Bacteriological studies and the earlier inoculation experiments yielded negative results. But by means of special staining methods Löwit [4] has demonstrated peculiar bodies in the blood resembling protozoa which he regards as the cause of the disease. He further supports his claim by the artificial production in animals of a disease resembling leukemia. As a specific stain he uses thionin, followed by Lugol's solution. In his latest paper Löwit [5] recommends that the blood be spread with a needle, as the leucocytes are injured when too thin a film is made.

Löwit found what he claims to be an ameba within the lymphocytes (*Hemameba leucemia magna*). In lymphatic leukemia he found metachromatic bodies. They were present in only two cases in the peripheral blood, but more frequently in the blood-forming organs. These also he regards as amebæ (*Hemameba leucemia parva sive vivax*). He describes with both hemamebæ various stages in the life-cycle — young parasites, crescent, sporulation and degeneration forms.

The views of Löwit have found a number of strong opponents, the most aggressive of whom is Türk,[6] who asserts that Löwit's bodies are artefacts derived from mast cell granules, and that he was able to produce forms not distinguishable from Löwit's parasites in non-leukemic blood. Vittadini [7] is the only one who claims to have confirmed Löwit's findings.

Pinkus [8] thinks it is questionable whether the bodies, even if they occurred exclusively in leukemic blood, are the cause of the disease, since *Hemameba magna* has been found in a case of lymphatic leukemia, and furthermore, in myclogenous leukemia the so-called parasites are not in

[1] Cent. f. allg. Path., 1901, xii, p. 967 .
[2] Virchow's Archiv, 1894, cxxxvii, p. 1.
[3] Walz cites as his authority Dr. Cabot's Clinical Examination of the Blood, New York, 1900, but the book contains no such statement, and Dr. Cabot informs me that he has never observed such a case.
[4] Cent. f. Bakt., 1898, xxiii, p. 206. Wiener klin. Woch., 1899, xii, p. 865.
[5] Zeitschr. f. Heilkunde, 1901, xxii.
[6] Wiener klin. Woch., 1901, xiv, p. 435.
[7] Cited by Walz, *vide supra*.
[8] Leukemie. Nothnagel's spec. Path. u. Ther., Vienna, 1901, p. 75.

the myelocytes, but in the lymphocytes, which are the least characteristic cells in this form of the disease.

Türk has never succeeded in transmitting leukemia to animals. He states that the disease produced in rabbits by Löwit has nothing to do with myelogenous leukemia, as the same disease-picture can be produced by inoculating portions of organs from individuals that have died of other diseases. Türk asserts that *Hemameba parva* is nothing more than the nucleolus of the lymphocyte.

UNDIFFERENTIATED LYMPHOID CELLS IN MYELOGENOUS LEUKEMIA.

In every case of myelogenous leukemia the blood contains non-granular cells with a small amount of protoplasm. These cells are present in considerable number and are generally looked upon as lymphocytes. L. Michaelis,[9] however, regards them as undifferentiated lymphoid cells. They cannot be distinguished morphologically from lymphocytes. The undifferentiated lymphoid cells by further development become transformed into neutrophilic myelocytes, while the lymphocytes are adult cells. The undifferentiated lymphoid cell differs from Benda's myelogenic cell in that the former develops not only in the bone marrow but in other tissues.

Michaelis supports his view by a remarkable case of disease of the blood-forming organs which came under his observation. The total number of leucocytes in the peripheral circulation was only slightly increased, but 76% of the cells were lymphocytes and 7% myelocytes. The patient died after an illness of three months. The lymph-nodes were not swollen. The spleen was very large and soft and weighed 2,000 grams. The bone marrow was red and consisted almost entirely of lymphocytes and giant-cells. The spleen had the same histological structure.

LYMPHATIC LEUKEMIA WITHOUT ENLARGEMENT OF THE LYMPH NODES.

A careful histological study by Reed [10] supports the view of Walz and Pappenheim that in every case of leukemia the primary seat of the disease is in the bone marrow. The old theory that lymphatic leukemia is essentially a disease of the lymph nodes is still supported by Ehrlich. He bases his claim on the assertion that no lymphocytes occur normally in the bone marrow. This statement the writer calls in question, as in the bone marrow cells are found identical morphologically with the lymphocyte. There is no proof that the lymphocytes of the blood come from the lymph glands alone, and although it cannot be stated positively that they arise in the bone-marrow it is known that all other colorless cells of the adult blood originate in the bone marrow from lymphoid cells and that cells identical morphologically with the lymphocytes of the blood are found there.

The case upon which this study was based ran a rapid course. Hemorrhages, anemia and progressive weakness were the chief clinical features. A thorough study of the blood was not made during life. At autopsy neither spleen nor lymph nodes were enlarged. The bone marrow of the femur was homogeneous, a deep red and very soft. Microscopically the bone marrow consisted chiefly of lymphoid elements. The predominating cell was smaller than the red blood corpuscle and possessed a densely staining homogeneous round nucleus, and a small amount of clear protoplasm. There was another type of lymphoid cells varying in size which possessed a nucleus relatively large in respect to its protoplasm. The nucleus always showed a definite chromatin network. The cell is identical in structure with the lymphocytes of the blood of the lymph nodes. There was no indication of hyperplasia in either the spleen or lymph nodes.

This case is not unique. Six similar ones have been recorded within the last few years, and authorities are now nearly agreed that in lymphatic leukemia the blood changes do not occur until the bone marrow is involved. The writer states that no case of leukemia has come to autopsy in which the bone marrow was normal.

If leukemia is always a disease of the bone marrow it is manifestly incorrect to restrict the term myelogenous to one form of the disease. The writer suggests a new clinical classification based upon the blood picture. Three forms of leukemia are recognized, all due to myelogenous changes: the myelocytic, the lymphoid and the mixed cell varieties. Leukemia resembles an infectious disease. Possibly in leukemia a positive chemotaxis exerted by some poison in the body draws out certain cells from the bone marrow into the blood.

Reed has apparently overlooked the case of lymphatic leukemia reported by Dennig [11] from Liebermeister's clinic in which there was no swelling of the spleen or lymph-nodes and the bone marrow showed no microscopic alterations.

Blumer and Gordinier [12] studied a case of lymphatic leukemia of at least a year's duration in which the lymph nodes were not enlarged. The clinical picture was that of pernicious anemia. As in the similar cases of lymphatic leukemia without enlargement of the lymph nodes reported by Pappenheim and Reed, the striking feature of the pathological examination was the marked lymphoid change in the marrow of the long bones.

The predominating cell of the blood, although resembling the normal lymphocyte, presented points of difference of which the most important was the acidophilic character of its protoplasm. The writers regard this prevailing type of cell as identical with the predominating cell in Reed's case. They are inclined to accept the theory of Rubinstein that both lymphocytes and erythrocytes originate from a colorless mother cell in the bone marrow, and they regard the predominating white cell in the blood of their case as this mother cell. Arrest of development of this mother or ancestral cell would explain both the anemia and

[9] Zeitschr. für klin. Med., 1902, xlv, p. 86.
[10] Am. Jour. Med. Sci., 1902, cxxiv, p. 653.
[11] Münch. med. Woch., 1901, p. 140.
[12] Medical News, 1903, lxxxiii, p. 833.

the lack of typical lymphocytes noted in their case.

The writers hold that lymphocytes in adults are formed normally both in the lymph nodes and in the bone marrow. Theoretically, therefore, it would be possible to have lymphatic leukemia as a result of disease of the bone marrow, or of the lymph nodes, or of both. When lymphatic leukemia is of the ordinary type, that is, with enlargement of the lymph nodes, an increase of the typical lymphocyte occurs, whereas in the cases without enlargement of the lymph nodes the predominating cell differs from the ordinary lymphocyte and is formed in the bone marrow.

MYELOGENOUS LEUKEMIA WITH UNUSUAL FEATURES.

Ehrlich has asserted that in every case of myelogenous leukemia there is an increase of the absolute number of eosinophiles and this increase of eosinophiles is of great diagnostic value. This doctrine of Ehrlich has been repeatedly but unsuccessfully attacked. Simon,[13] however, reports a case in which throughout the course of the disease the eosinophiles were absent from the blood. He could find no similar observation in the literature, and he met with but one instance of leukemia in which the total number of eosinophiles was not increased.

The blood picture in Simon's case was remarkable in other respects. The percentage of mast cells was small, and early in the disease the absolute number was low. This is interesting in view of Ehrlich's doctrine that the mast cells show an absolute increase in all cases of myelogenous leukemia and that this increase of mast cells is of even greater diagnostic importance than the increase of eosinophiles. Shortly before death, however, the total number of mast cells became markedly increased.

Until near the end of the disease there was only slight enlargement of the spleen, and the total number of leucocytes scarcely exceeded the physiological limit. Myelocytes were present in the blood and the number increased with the advance of the disease. During the last six months of illness myelocytes formed from 30 to 50% of the leucocytes. This case and the one reported by L. Michaelis illustrate the fact that the appearance in the blood of myelocytes rather than an increase in the total number of leucocytes is the characteristic feature of the disease. Shortly before death the leucocyte count rose to 116,000.

Large mononuclear cells devoid of granules and distinctly different from the large mononuclear leucocytes of the blood appeared in large number toward the end of the illness when no less than 54% of all the leucocytes belonged to this type. Nägeli claims that these cells are found in the blood in every case of myelogenous leukemia and he noted also that they may in the later stages of the disease form the predominating leucocyte in the blood. Nägeli regards them as specific bone marrow cells and the antecedents of Ehrlich's myelocytes. For the study of the mononuclear non-granular elements in the blood the eosinate of methylene blue should be used, as Ehrlich's triple stain does not differentiate the lymphoid cells.

[13] Am. Jour. Med. Sci., 1903, cxxv, p. 984.

(To be continued.)

Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

TWENTIETH ANNUAL MEETING, HELD AT WASHINGTON, D. C., MAY 12–14, 1903.

THE President, DR. NORMAN BRIDGE of Los Angeles, in the chair. Sixty-five members of the association were in attendance. The President in his opening address called attention to some of the dangers and duties of the association. First of all we usually make our generalizations, as to the effects of climate, by its apparent influence on the newcomer sick, rather than on the permanent resident population. This subjects us to several possibilities of error. The effects witnessed in the bodies of sojourners in a new climate might be fairly attributed to the influence of the latter if other things were equal, but other things never are equal or nearly so, nor can they be, and every one of these invalid newcomers is under conditions and subject to manifold influences that are markedly different from those that obtained at his home where the invalidism began. Dr. Bridge characterized the melancholy migration of patients hopelessly ill of tuberculosis to some distant and famous climate as one of the greatest tragedies of modern times. After citing three cases in which the unfortunate patient was sent thousands of miles for a climate when death was evidently near, Dr. Bridge discussed the border line cases in which there is a fair question as to the use of climatic treatment. We have created a widespread popular belief in certain curative effects of climate — those effects exist, but only for patients who still have fair physiologic forces, and it is our duty to try to prevent a blind faith in their power to raise the dead.

DR. SAMUEL A. FISK read

SOME NOTES ON NASSAU,

founded on a three months' residence during the past winter at that port. The picture of Nassau, as he witnessed it, was summer land in winter, roses in January, muslin gowns at Christmas, doors and windows open day and night, almost constant sunshine, snow and slush eliminated. It is reached by steamer in three and a half days from New York, or 160 miles from Miami, Fla. The island is about twice the size of Nantucket. The soil is dry, and rain does not stand in puddles. It is of coral formation, white lime rock, which can be quarried with the saw. There are more days of clear sunshine than the meteorological records indicate, as observations are taken only at 8 A.M. and 8 P.M. Thunder showers are rare

in winter. The effect of this tropical climate on any one from the latitude of New York is somewhat enervating and suggests the onset of malaria. Proper regulation of diet, exercise and arrangement of clothing goes far to mitigate the depression experienced at first. It does not do to eat and drink as one may in a colder climate. There is a disposition to do very little, and this little must not be done at mid-day. There is no sewer system and, for the most part, the privies are insufficient and inconvenient. The mainland supplies most of the food for tourists. Ice is manufactured at the hotels, but the town generally is supplied with ice from Maine. Milk is very expensive. Drinking water is obtained from cisterns, which collect the rain water or from wells which are impregnated with lime. Golf and bicycling are possible, but the climate does not favor the necessary activity. Piazza life is the main feature. There are commodious hotels with modern conveniences. This station is suitable for persons with Bright's disease, diabetes, neurasthenia and insomnia. The climate is unsuited for cases of tuberculosis. Nassau is soothing, not bracing; as a sanatorium for winter alone the Bahamas are, beyond all question, superior to any other health resort on the eastern coast of North America.

Dr. Guy Hinsdale presenfed a paper entitled

IMPRESSIONS OF CALIFORNIA RESORTS.

The paper was based on the experiences in connection with the recent visit of the association to California. Climatic details of Northern California, particularly in the vicinity of Mount Shasta, were given. The climate of San Francisco, Palo Alto, Santa Cruz, Monterey, Santa Barbara and other important stations was described. Dr. Hinsdale believes that sanatoria for tuberculous patients should be erected on the higher elevations on the Shasta route, at San Luis Obispo and Santa Barbara, excellent institutions having been already instituted at more southerly stations.

Dr. R. H. Babcock of Chicago read a paper entitled

SOME FURTHER REMARKS AND QUERIES CONCERNING THE INFLUENCE OF ALTITUDE ON HEART DISEASE.

Dr. Babcock mentioned three cases of mitral stenosis which were able to endure an altitude of 6,000 feet without discomfort; also a female without previously recognized disease of the heart who yet experienced an acute disturbance, which disappeared soon after reaching a lower level. A report of a minor who developed precordial pain and tachycardia after considerable exertion was given, his symptoms becoming relieved at the level of Chicago. Brief allusion was made to the development of uremic symptoms in some cases of chronic nephritis at the altitude of Denver. In chronic nephritis are symptoms referable to lowering of blood pressure or to increased metabolic activity? In the case of the miner, were the symptoms due to cardiac overstrain and not to the altitude *per se?* Could the effects in the other cases, good or bad, be attributed to lowered blood pressure incident to low atmospheric pressure? Or can any case of cardiac disease endure a moderately high altitude after having refrained from exercise until becoming acclimated? A consideration which seems to argue against a person's tolerance or intolerance of moderate altitude being due to the blood-pressure lies in the generally accepted statement that the pulse of the consumptive is one of low tension, and yet most of such patients are able to endure residence in Colorado at a mile or so elevation without serious cardiac embarrassment. Dr. Babcock showed that the danger of travel and residence at an altitude appears to be really greater in the case of apparently healthy hearts, since such individuals are likely to overdo and, therefore, get up a condition of cardiac overstrain, and that in all cases it is not so much the altitude itself which is to be feared as the ease with which the heart may be overstrained in the mountains. This strain is not due so much to the altitude as it is to the fact that in the higher regions the surface of the ground is uneven and hilly.

Dr. DeLancey Rochester of Buffalo read a paper on

THE ROLE OF LOCAL SANATORIA IN PREVENTING THE SPREAD OF TUBERCULOSIS.

Assuming that the best results in the treatment of this disease are obtained in closed sanatoria, and that patients once cured are no longer foci from which the disease can spread, the author advocated the establishment in every community of two sanatoria, one for advanced and one for incipient cases. This is necessary, because the treatment of the two classes of cases is decidedly different, and also because the constant presence of advanced cases and the occasional painful death of one or more patients have a decidedly depressing influence on the incipient cases. Dr. Rochester advocated compulsory notification in tuberculosis, and also the power to remove patients to the sanatorium for the good of the community.

Dr. Vincent Y. Bowditch of Boston read a paper on

SUBSEQUENT HISTORIES OF SEVENTY-NINE ARRESTED CASES TREATED AT THE SHARON SANITARIUM FROM 1891 TO 1902.

The results were obtained in a climate thought to be most unfavorable for consumptives, not far from the sea coast, and at an altitude of 200 to 300 feet above sea level. This sanitarium and that of Dr. Millet at East Bridgewater Mass., are under similar conditions in this respect, but the latter is for more well-to-do patients. During the eleven years in which the Sharon Sanitarium has been in existence, 182 patients have been treated. Of these, 18 are excluded, because they remained but a few days or were not cases of tuberculosis. Of the remaining

164 cases, 79 were recorded as arrested. Of these 79 there have died since leaving the institution after varying periods of comparative health only 12 persons, or 15.2%. These cases were all analyzed and the causes of death reported.

Among other cases reported as recovered was a woman who came in 1893 with tubercle bacilli and disease of the right lung. After fourteen months she left the sanitarium "a magnificent specimen of health, her cough having ceased several months before." She has remained perfectly well ever since — nine years; this result is a brilliant example of what can be done in a changeable, harsh climate not far from sea level. Dr. Bowditch believes, however, that in a better climate still better results, in general, will be obtained.

DR. E. O. OTIS of Boston read a paper on

DISPENSARIES FOR TUBERCULOSIS, WITH A DESCRIPTION OF THE TUBERCULOSIS DEPARTMENT OF THE BOSTON DISPENSARY.

After describing English and French dispensaries, and advocating special dispensaries for tuberculosis, an account was given of the Boston Dispensary. This affords treatment to all classes of patients, the daily visitors numbering from 250 to 300 and occasionally approaching 500. The department for the tuberculous is in the same building, and this arrangement provides an easy examination of the throat, ear, eye or other organ when desired. The clinic lasts from two to three hours daily. The sputum is examined and a report given at the time of the visit. The tuberculin test is employed successfully in out-patients and x-ray diagnosis is used. The routine examination covers every possible feature of a tuberculous case. The Boston Dispensary divides the city into districts and sends a physician daily, one for each district, to all cases of sickness among those who are too poor to pay a physician and are unable to visit the dispensary. Accompanying each physician is a trained nurse furnished by the Instructive District Nursing Association, a most valuable adjunct to the medical supervision. Food, if needed, is supplied from a diet kitchen. Patients in the incipient stage are sent to the State Hospital for Consumptives at Rutland, and for the destitute means are provided to pay the sum required, viz., $4 weekly. In many advanced cases admission is secured at the innumerable little boarding houses near Rutland, which have sprung up about the great sanitarium. In Boston notification in tuberculosis is compulsory. The dispensary also examines, when desired, patients who have been discharged from the Rutland Sanitarium or have taken the open air cure elsewhere. The dispensary affords clinical instruction to students and physicians in the examination of tuberculous patients.

DISCUSSION.

DR. LEONARD WEBER of New York thought that an effort should be made in all of the large cities, and particularly in New York, to equip dispensaries with every facility for the early diagnosis and treatment of tuberculosis, and that this object would be best obtained in the manner brought out by Dr. Otis' paper.

DR. DELANCEY ROCHESTER. I have been very much interested in Dr. Otis' statement regarding the dispensary treatment for pulmonary tuberculosis in Boston, for I made a very bad failure of an attempt to establish such a thing at home. The men who were in charge of the general medical clinic simply wouldn't stand for a clinic for tuberculosis alone, and we had great difficulty, in fact we absolutely failed, in establishing such a clinic. I see that, according to Dr. Otis' statement, he has enlarged his clinic to one for diseases of the lungs in order to finally accomplish the purpose.

DR. FREDERICK I. KNIGHT. Referring to the advent of the district nurse, I desire to state that any one who has visited the homes of the poor people since the introduction of the visiting nurse will agree in feeling that her visits to the homes of these patients is going to bring about great good.

DR. JUDSON DALAND. I wish to express my appreciation of Dr. Otis' paper, and to thank him for bringing out so thoroughly the uses to which a special dispensary service for this disease may be put, and more especially for his suggestions regarding the care of the patients so far as food is concerned. If we could put aside sufficient money for proper equipments, these cases that cannot go to sanatoria could be kept under close supervision, and I am perfectly certain that an enormous amount of good could be accomplished.

DR. J. E. STUBBERT of New York read a paper entitled

TENT LIFE FOR CONSUMPTIVES.

The results of sleeping in the open air were noted, and arrangements for moving the beds from the patients' room to a balcony or projecting the head of the bed through low windows were commented on. Dr. Stubbert advocated tent life as better suited to the majority of cases, and said that two tent colonies will be established during the summer at Liberty, New York, under his supervision. One for the richer patients is located on the side of a mountain, and is arranged in camps. The tents are large, with compartments for living room, toilet, etc. There will be sanitary plumbing and special attention to drainage. The camp will have telephone connections and other conveniences. The other camp is an extension of a boarding house, in connection with which individual tents for sleeping and living are rented. The expense in the latter camp is ten dollars weekly.

DR. FREDERICK I. KNIGHT. The economy of tents must be considered, which means that the air space and the facilities for its proper exchange will be limited, and I am therefore of

the opinion that barracks or cabins would serve the purpose much better. I am free to confess that the air in the few tents which I have been in seemed to me the worst possible for a consumptive to live in, and especially would this be true when artificial heating is necessary.

Dr. Samuel A. Fisk. I wish to endorse strongly the position taken in this matter with regard to the great necessity for fresh air. I think that the other considerations are of minor importance. The main thing that we are striving for is to provide an ample amount of fresh air and sunlight, and the kind of tent to be used is another thing. Food is likewise of prime importance. I know from my own experience on the frontier that persons can live in tents in mid-winter, and I know from living in a tent myself that when one has become accustomed to tent-life, and has lived and slept in a tent, he does not care to live in anything else.

Dr. J. Edward Stubbert. I agree with Dr. Knight in the statement regarding the poor ventilation often found in tents, but in citing that fact we must not overlook the other side of the question, namely, that the ventilation of the rooms in the majority of cases is much inferior to that found in the ordinary tent. I think the point that a person who has once lived in a tent will live in nothing else is true.

(To be continued.)

Recent Literature.

The Diagnosis of Surgical Diseases. By Dr. E. Albert, late Director and Professor of the First Surgical Clinic at the University of Vienna. Authorized translation from the eighth edition. By Robert T. Frank, A.M., M.D. 419 pages and 53 illustrations. New York: D. Appleton and Co. 1902.

This book is intended to present to practitioners and students the problems in diagnosis which actually confront them at the bedside. The subjects treated comprise only a part of the surgical lesions usually found in textbooks. They are the lesions of the different portions of the body which have especially attracted the attention of the writer in this connection. They are grouped according to their similarity of symptoms and points of general resemblance. In this way the advantages of clinical teaching are most nearly attained and by the presentation of a large number of clinical cases the value of this plan is further enhanced. Also, as the translator states, the fragmentary and disconnected instruction of clinical demonstrations, even under the most favorable circumstances, is more systematized. The subsequent reports of cases post-operative, and at times post-mortem, in confirmation or correction of diagnosis, is of great additional value to this system. It is unusual to meet a treatise on surgical diagnosis which is not an enumeration of a list of possible diseases, or in other words a systematic pathological-anatomical classification of surgical diseases. This latter method is not a characteristic feature of the present work. The author was a veteran teacher and a clinician of great experience. The wide circulation of the book in Europe is proof of the favor it has found there. The volume in a way suggests to one that classic of Milton's "Rest and Pain."

From the above description, however, one must not expect to find an ideal "up-to-date" treatise in this work. For since its author left it surgical science has advanced and new means of diagnosis have developed, *e. g.*, radiography, which are not herein described. Taken as a whole, however, the book has much to commend it and will both interest and instruct its readers.

Operative Surgery, by Herbert Wm. Allingham, F.R.C.S., Surgeon of the Household of His Majesty the King; Surgeon in Ordinary to His Royal Highness the Prince of Wales; Senior Assistant Surgeon and Lecturer on Operative Surgery at St. George's Hospital; Consulting Surgeon to the Surgical Aid Society; Late Surgeon to the Great Northern Hospital; Late Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum. New York: William Wood & Company. 1903.

This book consists of a brief account of the leading features of an operation. The author has tried to give memoranda which would serve to emphasize the important points concerning many operations and has given many hints which are based on his personal experience. The book has the distinct advantage of being a small volume and will serve as a useful guide to practitioners who desire to look up an operation.

The Practical Medicine Series of Year Books. Volume VII. Pediatrics, edited by Isaac A. Abt, M.D., Assistant Professor of Medicine (Pediatrics Department), Rush Medical College; Orthopedic Surgery, edited by John Ridlon, A.M., M.D., Professor of Orthopedic Surgery, Northwestern University Medical School. June, 1903. Chicago: The Year Book Publishers.

This little work gives a fairly complete review of the pediatric and orthopedic literature of the past year The abstracts are, as a rule, good. In some cases, however, they are not very clear: the wrong impression is given, or the relative values are not properly defined. The editor's notes are valuable.

Modern Materia Medica and Therapeutics. By A. A. Stevens, A.M., M.D., Lecturer on Physical Diagnosis in the University of Pennsylvania, etc. Third edition, entirely rewritten. W. B. Saunders & Co. 1903.

This is primarily a textbook and suitable chiefly for students. It does not differ essentially from many others of its class.

The Surgical Treatment of Gastric and Duodenal Ulcers. By B. G. A. MOYNIHAN, M.S. (Lond.) F. R. C. S. (Eng.), Senior Assistant Surgeon, Leeds General Infirmary, etc., etc. Illustrated. Philadelphia and New York: W. B. Saunders & Co. 1903.

This brochure of 83 pages is devoted to a discussion of the author's personal experience in the operative treatment of simple ulcer of the stomach and duodenum and includes a tabulation of his operative work.

The subject has been classified and considered as: (1) Perforation of Gastric and Duodenal Ulcers; (2) Hemorrhage; (3) Chronic Ulcer; (4) Hour-glass Stomach.

The work is well known, and the substance of the volume has already been presented to the profession through the reports of Mr. Moynihan's paper read at the meeting of the American Surgical Association in May, 1903. His views on this important subject are now available in a convenient form for those interested in this branch of surgery. The operative technique of his method of gastro-enterostomy is well described and illustrated. The tabulation of his clinical work is interesting and instructive, the date, age, sex, a résumé of the clinical history, the character of the operation, the condition found and finally the result, with the author's remarks being systematically and concisely given in each case. His paper was one which has attracted much attention.

The Office Treatment of Rectal Diseases. By RUFUS D. MASON, M.D., Professor of Rectal and Pelvic Surgery in the John A. Creighton Medical College, Surgeon to St. Joseph Hospital, etc., etc. Illustrated. Second edition. Lincoln, Neb.: The Review Press. 1902.

The author's description of this little book of 125 pages is that it is not intended to take the place of larger works devoted to this subject, but that it shall supplement them and cover many points that have been omitted and that it gives details which he as a teacher and specialist by many years of practical experience has found valuable. Diagnosis is very briefly discussed. Etiology, pathology, anatomy, vague theories and major operations are omitted. Treatment mainly is presented to the reader and in the most terse, practical manner possible.

The special conditions discussed are Constipation, Hemorrhoids, Abcess, Fistula, Ulceration, Prolapse and Cancer. The concluding chapters are devoted to rectal examination for life insurance and local anesthesia. The book is written in that bright, positive, concise style that is always attractive and which makes the reader feel after its perusal that henceforth the treatment of this class of disease will be simple and successful. This effect is apparently due to the fact that the description of methods of treatment form the greater part of the work and that only successful methods of treatment are presented.

The book certainly does, as its author claims, supplement other more complete treatises. It contains many valuable suggestions and practical details of treatment.

Surgical Emergencies; The Surgery of the Head. By BAYARD HOLMES, B.S., M.D., Professor of Surgery in the University of Illinois, etc. New York: D. Appleton & Co. 1903.

This book of 569 pages is one of a series describing the every-day surgery of the human body. The surgery of the eye, ear and other well-established specialties are not considered. The plan of the work is based on the author's experience in teaching surgery, and consultation work with many practitioners. In the Table of Contents one notes Congenital Malformations, Injuries to the Head and Face, Fractures of the Skull and Cerebral Injuries and Abscess, Otitis Media and its Brain Complications, Epilepsy, Meningitis, Diseases of the Parotid, Neuralgia, Tumors of the Face and Skull, Brain Tumors, Surgical Diseases of the Orbit, Cancer of the Tongue and other similar lesions. At the beginning of each chapter the subject described is defined, classified, its variations stated and concrete examples of the more important conditions requiring surgical attention enumerated. Care is taken to avoid undue prominence or emphasis of unusual conditions, but those of common occurrence are thoroughly discussed. Those unusual, but of such a character as to require immediate relief, are considered. Finally are described those conditions of uncommon occurrence, but of great theoretical importance. The writer has tried by a variety of means, graphic and otherwise, to present the different subjects in such a vivid manner that the impression on the reader is both distinct and permanent. Pathology, diagnosis and the " proper " methods of treatment are taught

Dr. Holmes believes that anatomy and pathology are best studied by inspection of actual specimens. That a subject should be studied from textbooks, the current literature relating to it, and carefully reported clinical observations of actual cases. The subjects treated in this volume are rather the emergencies of the average physician than those of the professional surgeon. The book is somewhat fragmentary, but the plan on which it is written has many features which are attractive and commend it. It contains much of interest and value. It is illustrated by nintey wood cuts and fourteen colored plates, some of which are quite instructive.

A Compend of Diseases of the Skin. By JAY F. SCHAMBERG. Third edition, revised and enlarged, with 106 illustrations. Philadelphia: P. Blakiston's Son & Co. 1903.

The third edition of this " Quiz-compend " has just been published. The text has been carefully re-read and various additions and revisions made.

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SCARLET FEVER.

At a meeting of the Boston Society of Medical Sciences held in the Harvard Medical School, Dec. 15, 1903, Dr. F. B. Mallory presented a paper on certain protozoön-like bodies which he had found in the skin in four cases of scarlet fever.

The bodies may be divided into two groups, of which the first comprises a series of sharply defined bodies varying in size from about two to seven microns in diameter. They are composed of a granular, finely meshed reticulum and frequently contain one or more vacuoles. The second group consists of radiate bodies varying in size from four to six microns in diameter. They contain a central body around which is arranged a varying number of segments (10 to 18), which in the earlier forms are merely indicated, but in the later forms are sharply defined laterally from each other. At a still later stage the segments are separated from each other but are still grouped more or less closely around the free central body.

The bodies of the first group stain lightly but sharply with methylene blue in the eosin-methylene blue method after fixation in Zenker's fluid. In the radiate bodies, or rosettes, however, the central body and the peripheral parts of the segments stain deeply with the same color.

The bodies of both groups occur in vacuoles in the epithelial cells of the epidermis, between these cells, and free in the superficial lymph vessels and spaces of the corium, but nowhere else.

It is difficult to explain these bodies as artefacts or as degenerations. On the other hand they closely resemble the different stages in the asexual development (schizogony) of the malarial parasites, but they are about twice as large as the latter when compared with them under similar conditions of fixation and staining.

It is impossible at present to say much in regard to the distribution of these bodies until favorable cases can be obtained for post mortem examination and the skin from various parts be carefully studied. In three cases dying within forty-eight hours after the first appearance of the eruption the bodies were numerous in two cases and few in the third, while in a case dying on the ninth day of the eruption occasional bodies could still be found. In all four cases the amount of skin saved for examination was very small. In bits of skin from several other early cases no bodies could be found.

In a recent paper Hektoen[1] places scarlet fever at the head of the list of those diseases of which the cause is absolutely unknown. The discovery of these peculiar and characteristic bodies in the skin of four cases may prove to be the first step in the unraveling of the cause of this disease.

Dr. Mallory concluded with the statement that while he personally believes that these bodies are protozoa and have an etiological relation to scarlet fever, he is far from claiming that such a relation has been proved.

The paper was illustrated with a microscope demonstration of sections of the skin and with a series of colored drawings and of lantern slide preparations of the scarlet fever bodies. For the sake of comparison a series of lantern slides of segmenting malarial parasites in fresh blood, and in the blood vessels of the brain and other organs from a fatal case of malaria, was also shown.

SANITARY SUPERVISION OF PUBLIC WATER SUPPLIES A PROTECTION TO PUBLIC HEALTH.

There can be no question that money invested in sanitary measures intended for the protection of the public health, and the consequent saving of human life, is well invested, and in the long run will yield profitable returns. Too often does it happen that the truth of the old proverb, "When the steed is stolen shut the stable door," is recognized only too late to prevent serious illness and loss of human life.

This principle is frequently illustrated in the indifference of many communities to the importance of providing every possible means of protection for public drinking water supplies.

[1] Hektoen. Recent Investigations Bearing on Infectious Diseases of Unknown Etiology. Journ. of the Am. Med. Ass'n, 1903, vol. xli, p. 405.

In Pennsylvania the people have paid dearly for this wanton neglect, as shown in the long-continued pollution of the water supply of Philadelphia, and the serious outbreaks of disease which have taken place at Plymouth and at Butler.

In Massachusetts the question of water pollution has been a subject of frequent discussion by legislatures, medical societies and social organizations for a third of a century, the result being the enactment of a general statute in 1886 placing all public water supplies under the supervision of the State Board of Health. Under the provisions of this act the work of introducing new supplies and of improving those already existing has gone rapidly forward until, at the present time, over 90% of the population of the state is supplied with public water, mostly of good and wholesome quality.

A valuable index of the purity of the water supplied to a community is the amount of typhoid fever prevalent among the people thus supplied, as shown either by the mean annual number of cases, or of deaths from this disease as compared with the existing population.

In Massachusetts during the years preceding the general introduction of public water supplies, for example, the ten years 1856–65, the death rate from typhoid fever throughout the state was high, at 9 or 10 out of each 10,000 inhabitants, but since such introduction it has rapidly fallen until in the last year (1902) the death rate from this cause was not over 2 per 10,000, or less than one-fourth of its former rate.

In the report of the State Board of Health for 1896 a diagram is published in which the death rate from typhoid fever and the percentage of persons not supplied with public water are shown in two parallel and descending lines, which are nearly coincident throughout the period of forty years. It is among this class of persons not supplied with public water that typhoid fever is most prevalent. What may be properly termed epidemics of such illness appear to be a thing of the past in Massachsetts. When, therefore, a limited outbreak occurs like that which was reported in Lowell in September last, or the occurrence of a dozen or more cases at Williamstown, public suspicion is unduly aroused, since even these limited outbreaks are of rare occurrence.

In Pennsylvania, however, the outbreak at Butler has assumed a seriously epidemic form, since here there were 1,200 cases in a population of 18,000, or more than 7%, a ratio exceeding any that have occurred in Massachusetts in recent years at least thirty-fold, and this is only a repetition of the severe epidemic which proved so disastrous at Plymouth in Pennsylvania a few years earlier. Recent advices from Butler show that the probable cause of the epidemic in that town was due to the existence of cases of typhoid fever upon the watershed of the public supply at a time when repairs were being made in the filtering plant, which allowed unfiltered water to be supplied to the inhabitants.

In the state of Vermont, with less than 350,000 inhabitants, the Legislature appropriates $10,000 a year for the use of its State Board of Health, while the Legislature of Pennsylvania, a state having a population of 6,000,000, makes a niggardly appropriation of $6,000 for all sanitary purposes.

In Massachusetts liberal provision is made for special work in the protection of the purity of public water supplies, and the State Board of Health is given general supervision of this work. By this means the Board is enabled to assume a careful oversight of all the water supplies in the state, both those of municipalities and those of private corporations. It makes regular and systematic examinations of the waters, provides rules and regulations for the sanitary protection of such supplies, gives advice to the authorities of cities and towns, gives warning of impending danger from pollution and from lead poisoning, and by these means affords a protection the value of which is far beyond the amount expended in carrying out the provisions of the law.

HARVARD OARSMEN.

DR. GEORGE L. MEYLAN of Columbia University recently read a paper before the Boston Physical Education Society on the subject, "The Study of Harvard University Oarsmen from 1852 to 1892, Inclusive." The general result of his very careful investigation was that certainly no injury is done to the individual by the exercise of rowing, even in races, which taxes physical endurance to the extremest limit. He found that during the forty years under investigation there had been 152 "varsity" oarsmen, of whom 32 had died. He was able to obtain interviews or get direct information regarding the remaining 120.

It was found in the first place that these men gave an insurance risk averaging seven and one-half years more than among ordinary persons. As regards general health, they were found to be

decidedly above the average. Nor were they found in any case wanting when studied by statistical tests. Only one of the 120 men thought that he might have been injured by college rowing, but the evidence even in his case was by no means conclusive that this was the fact. On the intellectual side it furthermore appears that the oarsmen have in general been successful in life, and on the whole have obtained more distinction than students generally, or even men belonging to the Phi Beta Kappa society.

Interesting as these observations are, it must be borne in mind that the men under discussion are picked individuals, who would not have been chosen as representative oarsmen had they not at the outset had unusual health. It must also be borne in mind that the publicity given athletes in various ways must be regarded as an element, at least, in their future worldly success. Admitting, however, this possibility of error, it is a matter of great interest, amply borne out by Dr. Meylan's investigation, that violent athletic sport does not seriously impair the constitution in later life, as sometimes stated. Investigations of this nature should certainly be prosecuted with relation to other violent forms of exercise, since by these means alone may we arrive at a fairly exact knowledge of the benefit or injury of modern athleticism.

MEDICAL NOTES.

A Five-year Medical Course. — The College of Physicians and Surgeons of the Province of Quebec is reported to have recently decided to lengthen the medical course to five years and furthermore voted that British licenses should no longer be recognized in that province. A more complete preliminary education as represented by the B.A. degree was also advocated for students of medicine.

Italian Hospital at Orange, N. J. — At a meeting held on Nov. 22, at Orange, N. J., a movement was set on foot for the establishment in that place of an Italian hospital, under the auspices of the Roman Catholic Church. It is proposed to rent a temporary building at once, and later to erect a substantial hospital building with complete modern appointments.

Remarkable Case of Skin Grafting. — A successful case which has attracted much attention has just been discharged from the Muhlenberg Hospital at Plainfield, N. J. The patient, who was chief clerk in the New York office of the United States Express Company, was one of the victims of the wreck on the New Jersey Central Railroad at Westfield last winter, and has been undergoing treatment since Jan. 27. He was scalded so severely with steam that one-third of the cuticle was destroyed. His case was at first regarded as entirely hopeless, but after he had lingered for several days it was determined to attempt skin grafting. The method of Thiersch was adopted, and over 4,200 grafts were employed, the material for which was generously furnished by two hundred Masonic brothers and employees of the express company.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 16, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 44, scarlatina 31, typhoid fever 12, measles 151, smallpox 0.

Compulsory Vaccination again Upheld. — It is stated that recently another claimant for damages because of compulsory vaccination has been non-suited in the Boston courts.

NEW YORK.

Report of Board of Health. — On Dec. 9 the President of the Board of Health transmitted to Mayor Low the report of the Department for the year 1902. In it, it is stated that the death-rate fell to 18.75 per thousand, as compared with 20 in 1901 and 20.57 in 1900. The total number of deaths was 68,085, as against 70,722 in 1901 and 70,872 in 1900. In the mortality from diarrheal diseases in children under two years of age there was a decrease of 858 from the preceding year. The death-rate in the section corresponding to the former City of New York (at present the Boroughs of Manhattan and the Bronx) was 19.49, which figure was not approached since 1814, when the low death-rate of 19.60 was recorded. In Brooklyn the death-rate, 17.88, is believed to be the lowest ever recorded, with the exception of the year 1866.

A Centenarian. — Isaac Mitnitsky died in the Williamsburgh District of Brooklyn, N. Y., on Nov. 28, at the reputed age of 109 years. He was born in Moscow, Russia, and the year of his birth, 1794, the family affirms, is recorded in the official records of that city. He did not come to this country until he was 92 years old, and since then he has made the journey back to Russia no less than four times.

DECISION IN FAVOR OF A HOSPITAL. — In an action brought by Mary H. Rice against Vassar Brothers' Hospital, Poughkeepsie, to recover $5,000 damages for injuries received by falling on the defendant's sidewalk, Judge Samuel T. Maddox, in the Supreme Court at Poughkeepsie on Nov. 24, non-suited the plaintiff on the ground that a charitable corporation is not liable for damages alleged to have been due to the negligence of the trustees. The decision was made on the application of the attorneys for the hospital, who brought forward the claim that to make a trust fund liable for damages might defeat the purpose of the trust by so depleting the funds as to make them inadequate.

DEATHS FROM VEHICLES. — Police Commissioner Greene has made public a statement in which he claims that the number of persons killed by vehicles in the streets of New York during 1902, 538, which was published a short time since, is too large. The correct figure, he says, is 375, and his statistics show that 172 deaths were caused by street cars, 146 by trucks, wagons, etc., 9 by automobiles, 7 by runaway horses and 2 by bicycles, while in 29 the exact cause was not reported. In his statement General Greene expressed the opinion that in order to reduce this evil there should be a more vigorous enforcement of the speed ordinances, and also the meting out of more adequate punishment to offenders.

AN APPEAL TO VANITY. — Last year 125,000 persons availed themselves of the privileges afforded by the permanent public baths, but of that number only 16,052 were women and girls. The Association for Improving the Condition of the Poor came to the conclusion that something would have to be done to increase the attendance of the latter, and after mature deliberation it was determined that an appeal to personal vanity would be more effective than one for the public welfare. Accordingly cards are now being handed out by agents of the society to girls and women in the neighborhood of the baths which bear this inscription: " For a soft, rosy complexion, a quick, graceful walk, and a healthy appetite, try a shower bath twice a week."

VACCINATION OF PUBLIC SCHOOL CHILDREN. — The Appellate Division of the New York Supreme Court for the Second Department, sitting in Brooklyn, handed down a decision on Nov. 20, upholding the constitutionality of the statute enforcing the vaccination of public school children. The decision was given in the case of Edmund C. Viemeister of the borough of Queens, who sought to compel the Board of Education and the principal of Public School No. 12 in Queens to admit his child to school, admission having been denied because the child had not been vaccinated. It was urged on behalf of Viemeister that the statute was void, being contrary to the provisions of the Constitution. In the prevailing opinion Justice Woodward declares that the statute does not violate the Constitution, as it operates equally upon every person who is or may desire to become a pupil in the public schools, and affords equal protection to all. He then adds: " However willing we might be to agree with the appellant that the practice of vaccination is attended with dangers, and that its efficacy is a matter of uncertainty, these are matters which should be properly addressed to the legislative department, rather than to the courts." Justice Hirschberg also wrote an opinion sustaining the statute, declaring that it constituted a legitimate exercise of the police power of the state.

Miscellany.

RETIREMENT OF DR. EDWARD COWLES FROM THE McLEAN HOSPITAL.

AT a meeting of the Trustees of the Massachusetts General Hospital, held on Friday, Dec. 11, 1903, the following votes relating to the retirement of Dr. Edward Cowles of the McLean Hospital were placed upon their records:

Voted: That the Trustees of the Massachusetts General Hospital, in grateful recognition of the long and successful administration of the McLean Hospital by Dr. Cowles, place this minute upon their records. Dr. Cowles entered the service of the Hospital as Superintendent of the McLean Asylum on Dec. 11, 1879, and is the first of its officers to take advantage of the scheme of retiring allowances adopted by this Board on July 14, 1903. He came to the institution a well-trained and successful hospital administrator. During the twenty-four years of his devoted and efficient service the Asylum has been transformed into a hospital; the attractive and admirably planned establishment at Waverly has taken the place of the unsatisfactory and outworn quarters at Somerville; valuable researches into the nature and treatment of the most terrible of human ailments have been made; and improvements in the care of the insane have been made possible by the knowledge so acquired. At all times he has been the patient and persuasive advisor of the Board and its trusted and efficient agent.

Voted: That a Board of Consulting Physicians for the McLean Hospital is hereby created.

Voted: That Dr. Edward Cowles be appointed a member of the Board of Consulting Physicians for the McLean Hospital.

Correspondence.

NOTE ON THE USE OF THE FLUOROMETER TO ESTIMATE THE PROPORTIONS OF BETA AND GAMMA RAYS GIVEN OFF FROM RADIUM SALTS.

BOSTON, Dec. 11, 1903.

MR. EDITOR: In the fluorometer described in the third edition of "The Roentgen Rays in Medicine and Surgery," pages 640 to 642, the fluorescence of a specimen of radium is used as a standard with which to compare the fluorescence produced by different vacuum tubes on a tungstate of calcium screen. The fluorescence which a specimen of radium may excite on a tungstate of calcium or on a barium platino-cyanide screen may also be used as a standard, but this method was not chosen because these screens might deteriorate by continuous excitation, especially the barium platino-cyanide screen. To compare the fluorescence produced by different specimens of radium or by the different rays emitted by a given specimen of radium, the fluorescence excited on the barium platino-cyanide screen of the fluorometer by the radium may be a more convenient standard than the fluorescence of the radium itself.

Recently, in order to compare the amount of fluorescence produced by a specimen of radium chloride of about 7,000 activity, contained in a glass tube, with a specimen of pure radium bromide, I placed the first specimen below and in contact with one part of a barium platino-cyanide screen and the specimen of pure radium bromide below the other portion of the screen, the first part of the screen spoken of being protected from the rays of the pure radium by a sheet of lead placed below the radium of 7,000 activity. Experiment showed that in order to have the two portions of the screen equally brilliant, it was necessary to hold the screen 4½ inches (11.25 cm.) from the pure radium bromide. If, however, the Beta rays given off by this specimen of radium were cut off by interposing a plate of aluminum of suitable thickness between it and the screen the two portions of the screen were equally illuminated when the screen was held 1 inch (2.5 cm.) from the radium bromide. Judging by this experiment it would seem that the Gamma rays of pure radium bromide were only about one-twentieth as abundant as the Beta rays. I did not attempt to estimate the amount of Alpha rays; they were presumably cut off by the mica covering of the metal box which contained the radium bromide. This mica may have cut off also some of the Beta rays. I determined the thickness of the aluminum plate necessary for cutting off the Beta rays by first deviating them by a magnet and then interposing successive sheets of aluminum until no fluorescence was produced on a screen; this thickness of aluminum did not diminish to any noticeable extent the Gamma rays.

To diminish even slightly the Gamma rays I found it was necessary to interpose in their path an aluminum plate about five times as thick as that required to cut off the Beta rays so that for the purposes of the practitioner the thickness of aluminum about one-seventh of an inch, which cut off the Beta rays completely, would not affect the Gamma rays.

I am not studying the therapeutic effects produced by the Beta and Gamma rays together, on the one hand, and the Gamma rays alone, on the other. Thus far my observations indicate that healing can be produced in both ways, but if the Beta and Gamma rays are both used there is much more danger of a burn than if the Gamma rays are used alone. I am investigating this subject with a view to determining the method that should be followed in order to obtain the most good with the least danger to the patient. At present, however, I merely desire to direct attention to a method of estimating the amount of these rays given off by radium.

Very truly yours,
FRANCIS H. WILLIAMS.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 5, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York	3,785,156	1,313	351	24.37	21.70	5.18	3.12	.91
Chicago	1,885,000	478	128	19.45	16.11	2.72	4.39	2.09
Philadelphia	1,378,527	451	99	23.27	13.52	3.10	1.33	2.22
St. Louis	618,481	—	—	—	—	—	—	—
Baltimore	533,712	194	57	21.44	11.13	2.06	2.47	2.06
Cleveland	427,731	—	—	—	—	—	—	—
Buffalo	387,994	—	—	—	—	—	—	—
Pittsburg	351,745	—	—	—	—	—	—	—
Cincinnati	335,140	—	—	—	—	—	—	—
Milwaukee	315,307	—	—	—	—	—	—	—
Washington	295,103	—	—	—	—	—	—	—
Providence	191,230	67	14	11.94	8.95	1.49	1.49	—
Boston	603,163	214	54	19.16	16.35	3.74	.93	2.34
Worcester	132,044	35	8	5.71	17.14	2.85	—	2.85
Fall River	115,549	46	22	23.91	13.04	6.52	8.70	—
Lowell	101,959	30	9	3.33	30.00	—	—	—
Cambridge	98,639	19	5	26.31	21.05	1.05	—	—
Lynn	75,497	22	—	9.09	4.54	—	—	—
Lawrence	69,766	20	10	20.00	20.00	—	15.00	—
Springfield	69,389	21	4	9.52	23.81	—	—	4.76
Somerville	68,110	21	6	14.28	14.28	—	—	—
New Bedford	67,198	20	—	20.00	15.00	—	10.00	5.00
Holyoke	49,286	17	2	29.41	11.76	—	—	—
Brockton	44,873	10	0	—	—	—	—	—
Haverhill	42,104	12	1	8.33	8.33	8.33	—	—
Newton	37,794	7	2	14.30	—	14.30	—	—
Salem	36,876	10	1	40.00	—	—	—	20.00
Malden	36,286	10	2	10.00	—	10.00	—	—
Chelsea	35,876	10	3	10.00	30.00	—	—	—
Fitchburg	35,069	6	1	16.67	16.67	—	—	—
Taunton	33,656	—	—	—	—	—	—	—
Everett	28,620	5	2	—	—	—	—	—
North Adams	27,862	8	1	62.50	—	—	—	37.50
Gloucester	26,121	—	—	—	—	—	—	—
Quincy	26,042	3	1	33.33	—	—	—	—
Waltham	25,198	7	1	—	14.30	—	—	—
Brookline	22,908	6	—	16.67	—	—	—	—
Pittsfield	22,589	8	2	—	—	—	—	—
Chicopee	21,031	3	0	—	—	—	—	—
Medford	20,962	6	—	—	—	—	—	—
Northampton	19,883	6	1	—	33.33	—	—	—
Beverly	15,902	2	1	—	50.00	—	—	—
Clinton	15,161	5	1	—	20.00	—	—	—
Leominster	14,806	—	—	—	—	—	—	—
Newburyport	14,478	2	0	—	—	—	—	—
Woburn	14,300	—	—	—	—	—	—	—
Hyde Park	14,175	3	1	66.67	—	—	33.33	—
Adams	13,745	2	1	50.00	50.00	50.00	—	—
Attleboro	13,677	—	—	—	—	—	—	—
Marlboro	13,609	3	1	—	33.33	—	—	—
Melrose	13,600	—	—	—	—	—	—	—
Westfield	13,418	2	—	—	—	—	—	—
Milford	13,129	1	—	—	—	—	—	—
Revere	12,722	1	—	—	—	—	—	—
Framingham	12,584	2	—	—	—	—	—	—
Peabody	12,179	—	—	—	—	—	—	—
Gardner	11,928	—	—	—	—	—	—	—
Weymouth	11,344	3	0	—	—	—	—	—
Southbridge	11,268	—	—	—	—	—	—	—
Watertown	11,077	1	—	—	—	—	—	—
Plymouth	10,730	—	—	—	—	—	—	—

Deaths reported, 3,111; under five years of age, 792; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 677, acute lung diseases 546, consumption 343, scarlet fever 30, whooping cough 6, cerebrospinal meningitis 5, smallpox 16, erysipelas 6, puerperal fever 5, measles 10, typhoid fever 50, diarrheal diseases 87, diphtheria and croup 119.

From whooping cough, Chicago, Baltimore, Boston, Fall River, Lawrence and Holyoke 1 each. From smallpox, New York 1, Philadelphia 15. From cerebrospinal meningitis, New York 3, Somerville 2.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Nov. 21 the death-rate was 17.4. Deaths reported, 5,037; acute diseases of the respiratory organs (London) 165, whooping cough 59, diphtheria 73, measles 106, smallpox 2, scarlet fever 46.

The death-rate ranged from 7.1 in East Ham to 29.3 in York. London 16.6, West Ham 16.6, Brighton 9.6, Southampton 9.5, Plymouth 24.7, Bristol 15.5, Birmingham 20.6, Leicester 16.8, Nottingham 15.7, Liverpool 20.1, Bolton 15.9, Manchester 18.7, Salford 22.3, Bradford 18.8, Leeds 18.5, Hull 17.5, Cardiff 17.8, Rhondda 18.3, Merthyr Tydfil 21.8, Hornsay 9.3, Warrington 21.2.

METEOROLOGICAL REGORD.

For the week ending Dec. 5, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S.. 29	29.70	23	30	16	68	78	70	N W	N W	7	9	O.	O.	T
M. 30	29.92	30	35	25	81	62	72	W	N W	8	8	C.	C.	T
T.. 1	30.30	27	33	21	78	73	76	N W	N	9	4	C.	C.	O
W.. 2	30.20	30	35	26	84	94	89	N	N	12	18	O.	N.	.14
T.. 3	30.04	29	32	26	88	89	88	N	N	18	18	O.	O.	.10
F.. 4	30.02	34	38	29	79	75	77	N	W	14	8	O.	C.	T
S.. 5	30.06	34	40	27	69	82	76	W	W	11	8	O.	O.	T
☞	30.03		35	24			78							.24

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DEC. 10, 1903.

BROOKS, S. D., surgeon. To proceed to Brunswick, Ga., and assume temporary command of station. Dec. 8, 1903.

MCMULLEN, JOHN, passed assistant surgeon. Relieved from duty at Hongkong, China, and directed to proceed to San Francisco, Cal., and report arrival by wire. Dec. 3, 1903.

PARKER, H. B., passed assistant surgeon. To proceed to New York, N. Y., and report to Surgeon G. W. Stoner, Immigration Depot, for duty. Dec. 7, 1903.

WHITE, M. J., passed assistant surgeon. Relieved from duty at Honolulu, T. H., and directed to proceed to Hongkong, China, for duty. Dec. 2, 1903.

RICHARDSON, T. F., assistant surgeon. Granted leave of absence for seven days from Dec. 6, 1903, under paragraph 191 of the regulations.

AMESSE, J. W., assistant surgeon. To proceed to Seattle, Wash., and assume command of the service at that port. Dec. 5, 1903. Granted leave of absence for one day. Dec. 5, 1903.

BERRY, T. D., assistant surgeon. Detailed as inspector of unserviceable property at Cleveland, Ohio. Dec. 5, 1903. To proceed to Cairo, Ill., and assume temporary command of service at that port during absence of Surgeon G. M. Guiteras. Dec. 10, 1903.

EBERSOLE, R. E., assistant surgeon. Relieved from duty at Gulf quarantine station, and directed to proceed to Tampa Bay quarantine station and assume command. Dec. 7, 1903.

EBERT, H. G., assistant surgeon. Granted leave of absence for four days from Nov. 28, 1903, under paragraph 191 of the regulations.

SMITH, E. G., assistant surgeon. To proceed to Santa Clara, N. Y., for special temporary duty to examine aliens. Dec. 10, 1903.

BREADY, J. E., acting assistant surgeon. Granted leave of absence for two days from Dec. 15. Dec. 8, 1903.

GREGORY, G. A., acting assistant surgeon. Granted leave of absence for seven days from Dec. 5. Dec. 4, 1903.

RYDER, L. W., pharmacist. Granted leave of absence for fifteen days from Dec. 10. Dec. 9, 1903.

CASUALTY.

Acting Assistant Surgeon Hugh Burford died at Brunswick, Georgia, Dec. 7, 1903.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING DEC. 12, 1903.

W. M. WHEELER, surgeon. Ordered to the Navy Yard, Puget Sound, Washington, and also on board the "Nipsic."

J. C. THOMPSON, P. A. Surgeon. Detached from the Navy Yard, Puget Sound, Washington, and ordered to the "Albatross."

C. S. BUTLER, assistant surgeon. Detached from the "Albatross" and ordered home to wait orders.

C. S. PECK, assistant surgeon. Detached from the "Iris" and ordered home to wait orders.

H. T. PERCY, surgeon. Detached from the "Indiana" and ordered to the "Iowa."

P. F. JENNESS, assistant surgeon. Detached from the "Indiana" and ordered to the "Iowa."

C. D. W. BROWNELL, surgeon. Ordered to the "Amphitrite," with additional duty at the Naval Station, Guantanamo, Cuba.

G. PICKRELL, surgeon. Ordered to additional duty in charge of the Naval Hospital, San Juan, P. R.

W. N. MCDONNELL, acting assistant surgeon. Detached from the Naval Academy and ordered to the "Glacier."

SOCIETY NOTICE.

LECTURES ON ALCOHOL AND OPIUM INEBRIETY.—Dr. T. D. Crothers of Hartford, Conn., Prof. of Mental and Nervous Diseases at the New York School of Clinical Medicine, will deliver a course of four lectures on "Inebriety from Alcohol, Opium and other Narcotics," Jan. 5th and 6th, 1904, at 4 P. M. and 8 P. M., in the hall of this school, 328 West Forty-second street, between 8th and 9th Ave., New York City. The public are cordially invited to attend.

M. STERN, M.D., Secretary.

THE next meeting of The New England Hospital Medical Society will be held at Hotel Nottingham, Dec. 17, 1903. The scientific programme is—"The Mutation Theory" by Dr. H. E. Lothrop.—"Modern Bacteriological Methods" by Dr. M. E. V. Frazer. Report of a case by Dr. E. C. Upham. Presentation of specimens by Dr. Mabel Austin.

MARION NUTE, M.D., Secretary *pro tem.*
32 Mill St., Dorchester.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT—A meeting of the society will be held in Sprague Hall, Medical Library Building, on Monday, Dec. 21st, at 8.15 P. M. Papers—Dr. George G. Sears will read a paper on Prognosis in Acute Pleuritis. Dr. Robert W. Lovett will read on the Treatment of Severe Cases of Lateral Curvature. Discussion by Dr. Bradford and Dr. Goldthwait.

ARTHUR K. STONE, M.D., Secretary,
543 Boylston St.

THE HENRY PHIPPS INSTITUTE LECTURES.

THE third lecture in the course established by the Henry Phipps Institute will be given in the auditorium of the Witherspoon Hall, Philadelphia, on Tuesday, Dec. 29th, at 8.30 o'clock P. M., by Dr. G. Sims Woodhead, Professor of Pathology at Cambridge University, England. Subject "The Paths of Infection in Tuberculosis." This lecture will be illustrated by slides projected on a screen. The profession, in general, is cordially invited. A reception to Professor Woodhead will follow the lecture.

MAZYCK P. RAVEALL, Assistant Medical Director.

RECENT DEATHS.

EDWARD FRIDENBERG, M.D., of New York, a well-known specialist in diseases of the eye and ear, died on Dec. 9, from cerebral apoplexy. He was born in New York City in 1855, and was graduated from the College of Physicians and Surgeons in 1878. He served as interne at the Charity Hospital, Blackwell's Island, and was afterwards on the medical staff of Mount Sinai Hospital. Later he spent a considerable time in Germany in the study of ophthalmology and otology. He was formerly President of the Harlem Medical Association and at the time of his death was ophthalmic and aural surgeon to the German Hospital and Dispensary.

ELISHA HALL BRIDGES, M.D., of Ogdensburg, St. Lawrence County, N. Y., one of the leading physicians in the northern part of the state, died from acute Bright's disease on Dec. 9, at the age of sixty-two years.

WILLIAM H. HOLMES, M.D., for many years a prominent physician and surgeon of Orange, N. J., died recently from chronic kidney and heart disease. He was sixty-nine years old and during the Civil War he served as an assistant surgeon in the navy.

BOOKS AND PAMPHLETS RECEIVED.

Quiz-Compends, No. 19. Compend of Diseases of the Ear, Nose and Throat. By John Johnson Kyle, B.S., M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1903.

A Non-Surgical Treatise on Diseases of the Prostate Gland and Adnexa. By George Whitefield Overall, A.B., M.D. Illustrated. Chicago: Rowe Publishing Co., 1903.

Elements of Surgical Diagnosis. By A. Pearce Gould, M.S. (Lond.), F.R.C.S. (Eng.). Third Edition. Revised and enlarged. Chicago: W. T. Keener & Co. 1903.

Address.

THE RESPONSIBILITY OF THE MEDICAL EXAMINER.[1]

BY HERBERT PARKER, ESQ.,

Attorney-General of the State of Massachusetts.

Mr. President and Gentlemen of the Society:

He who addresses medical examiners has need to speak carefully, even ingratiatingly; he must appeal to your kind consideration, for it is certain that to the medical examiner, of all men, we must look for the truth to be spoken of us, after we are dead; and there is grave significance in this.

You have probably, you younger medical examiners, examined the statute to see the material origin of your authority. You older men have long since forgotten to look for any such assurance as statutory authority because you draw it now, rightfully, from your experience. You would have been surprised to find that the statutes of the medical examiner are different than what you have found with relation to the appointment of any other executive judicial examiner of the Commonwealth.

You will learn, have learned, to your great satisfaction, that the requirements for your appointment as medical examiners are, first, that you shall be discreet men, and second, that you shall be profoundly learned in the science of medicine. It is to this field of your responsibility that I would call your attention now.

You are assumed to be, and you must be, discreet men before you are qualified to enter on the discharge of duties of the most profound importance to the community. You stand, gentlemen, upon that debatable ground over which there hangs always something of the atmosphere and shadow of doubt. The line between the medical and legal profession is the line between the medical and legal issue.

Only as you are enlightened by profound learning, only as you are guided by soundest discretion, can you pass upon the first and vital question of your requirements. I say that these questions are of profound importance to the community, for they concern not only the public interest that involves inquiry into the perpetration of the possible crime, but here again is the grave responsibility that rests upon every physician to whom of necessity is entrusted the tenderest care of the sentiments of numerous persons with whom you are concerned.

You are called by some hysterical neighbor or friend to come and view the body of some one suddenly stricken to death. The frightened relatives or neighbors know not from what source that bolt came, from where it fell. They know only that for the moment they stand awe-stricken in the presence of the awful mystery of death. You, gentlemen, are required to preserve, in that atmosphere of doubt and alarm and excitement, the full possession of your mental faculties. It may be that what we human beings call accident caused that death. It may be that there was some lesion of some organ when the death occurred. We can no more tell than we can tell what causes the lofty trees of the forest to fall, and you can hear the plaint and fierce ravages that shall come and tear the forests. It may be that death came from that source, and we know who alone is to be invoked for such source. It may be that death came from violence — and I use violence in its statutory sense; not that some blow was stricken and death followed, but that violence that means intervention of some power, — whether death came from a sudden incisive blow, or the instantaneous effects of a poison perhaps caused that death. In either case it is a violent death, and this violent death for your consideration and investigation should be any death not immediately explainable from the surroundings that come to your attention.

Now, then, you have been called upon to consider, maybe, the result of any one of these causes. It may have been caused by the voluntary taking of some poison instigated by the voluntary wish of the victim, so that he or she should be relieved all of a sudden of the anxiety of life.

You will not and you do not, and it is to the eternal credit of your profession and to your personal character that you do not, hastily draw conclusions. You should not hastily draw the conclusion that death was through the voluntary act of the woman or man who has died, for you are to consider the effect of a hastily spoken word of judgment by the physician, upon whose utterance the stricken family and friends and community wait, as they would wait the utterance of an oracle. You are not hastily to conclude that death was caused by suicide, even though it is the easiest avenue through which you can escape from your doubt, for that means, if it be erroneous in its conclusion, that you not only have too hastily passed upon a medical and pathological question, but too hastily you have assumed to judge of the conduct of a fellow human being. And your words are not lightly spoken, for they carry the weight of the learning of your great profession. They carry the weight of that confidence which has come to you through your living and moving and being with and advising those who come to rely upon you.

You are not too hastily to conclude, and you do not, that the death was caused by the lawless act of some other, for the too hasty conclusion upon these lines is a twofold error. It would tend to fix suspicion first, upon some one who does not deserve such suspicion, and it sticks always, and years of righteous living cannot wholly obliterate the stain. It is a double error, because the too hasty conclusion of yours may lead to lines of investigation by the prosecuting officer or officers and they are shut off on other lines of inquiry through which and by which the truth might be ascertained. Far better not to pass upon it until the fullest and most exacting

[1] Address at the Annual Meeting of the Massachusetts Medico-Legal Society, June 9, 1903.

investigation can and shall have been made by you.

The statute requires of you in the performance of your duty what is not ordinarily required of any other officers, because their lines of duty are pretty clearly circumscribed and do not go from one field of inquiry or from one field of responsibility to another; the medical field is one, the judicial another, and so on through the complex departments of our government and administration of government. But you, gentlemen, are required to make, not merely such examination as will enable you to make a report precisely and exactly, as has been made by Dr. Twitchell here to-day, an example of medical precision, in the autopsy of the Bitzer homicide, — and I need not call attention to the other papers which enlighten and which gives me great satisfaction as an officer of the Commonwealth; — in the consummation and the purpose of these inquiries by medical examiners you are required not merely to inquire what the anatomical results are, but the statutes require of you that you shall make examination into the cause and conditions and circumstances concerning the finding of the body, that you are to call the attention of those persons who are supposed to have been in its presence, and who may be there, as to the position in which it lies, all of those things which to your mind may be significant, which explain the mystery which you are investigating.

Now, why are all these things required? They are, first, because of the general responsibility that rests with you by reason of the very subject, by your study and determination. They are further required of you because one of the primary functions of the medical examiner is the investigation of crime and the fixing of guilt where it belongs, and I need not tell you men, who are engaged with us prosecuting officers, that the end of the prosecution of every crime is not simply the fixing of guilt upon the guilty and securing punishment to those who can restore no life. It would be but a futile and discouraging effort that we are making. But this is not the ultimate end of prosecution and investigation of crime. What we seek is, and that is what all law seeks, the protection and security of human life, and every conviction secured righteously, as all must be in our Commonwealth. Every offender who has taken human life, who is apprehended in his crime, should be punished, and must know the power of our law; and the effect on others, who may be likewise tempted, is to know that a certain hand of the law, guided by human agency, will mete out and apprehend, and that the power of punishment is in this law, upon which ultimate security can rest, until by the grace of God and the efforts of men there are changes in the criminal law that have never yet come.

Now, therefore, when you are called to inquire into the death of some one supposed to have died from violence, you are to steady yourselves, bring yourselves into that receptive, responsible state of mind that shall set your every faculty into keenest activity, that shall constantly invoke the senses and ample responsibility that is in you. Be mindful of those whose interests are put into your keeping, the feelings of those who may be cast down by your word, but more than all you are to remember that wherever this ultimate purpose of the criminal law shall be appertained, the protection of human life shall depend upon the closeness of your observation and material opinion, and on the sentiments and inferences that you draw from those conditions, for you all know that the powers of the government first take their form and direction from the intimation that the medical examiner makes from the inferences that he draws from his examination.

Remember that the report on the autopsy that you make may be substantially the only material in which you may rely when the case may turn into a real case of homicide in court. The brain, preserved as this one we have here to-day, may not be brought before the court and jury by the physician, who may be called upon one side or the other to advise the court or the jury. It might all turn on the fact of this demonstration. The vindication of the law may all turn on the accuracy which you may have made and reported in your autopsy. You may have overlooked some detail that only momentarily attracted your attention. It may be that, by passing that door, you have gone by the avenue through which you could have passed very absolutely the question demonstrative of the cause of death.

I am saying to you these things which have occurred to every one of you. I am teaching you nothing. I am speaking to you of these things of which we all are reminded, and for us, we shall never forget that we will not discharge our duty if we suffer ourselves for a moment to be diverted from the absolute concentration on that which lies before us. Inferences one way or the other may be drawn from a statement, not absolutely verified by the autopsy. Or, if you make in your report of your autopsy suggestions that investigation might have made demonstrations rather than suggestions, the true inferences seen in the one case in the other are eliminated. Omit nothing that the closest scrutiny could suggest. Remember that the day is coming, gentlemen, when you are not to be confronted only by those persons who know nothing where you are wholly wise. The laymen who stand about, waiting for what you may tell them, contribute little to what you may tell, but rely on your manifesto. A case occurs, when your every conclusion is going to be disputed, when the inferences of guilt that you have drawn are unfounded. You cannot meet this attack that will be made upon you by counsel and by physicians, whose duty it will be to draw inferences, if there be any reason, differing from those that you have drawn.

The only method is by the absolute certainty so far as anything human can be of your original investigation and your report. It cannot be

met, believe me, gentlemen, by any ingenuity and reasoning, by any manifold duty and resentment of counsel. No ingenuity of convincing or manifold reasoning will permit you to meet this issue that you have got to meet.

Prepare yourselves by assuring yourselves that nothing in suggestion to your brain or mind has escaped this investigation. Then the case will be presented in court beyond a question of dispute of what the autopsy did reveal, leaving only legitimate elimination of the inferences that can be drawn from them.

This is the responsibility of the medical examiner briefly stated by one who is interested as you are in seeing to it that the beneficent purposes of our law, framed in our statutes, find its realization in the courts of justice, which are the places where human injuries manifest themselves, and the effort to make our human system of law follow along so far as we are able, to preserve them, and transform them to the divine law, under which we live and must ultimately go.

Original Articles.

DIFFUSE (COMBINED) DEGENERATION OF THE SPINAL CORD.

BY E. W. TAYLOR, M.D., AND G. A. WATERMAN, M.D., BOSTON.

(From the Department of Neurology, Long Island Hospital, Boston Harbor.)

THE following cases are reported as a further contribution to the subject of the combined lesions of the spinal cord. The confusion in the classification of these cases is still very great, and many further clinical and pathological reports are necessary before a satisfactory basis can be reached.

CASE I. DIFFUSE (COMBINED) DEGENERATION WITHOUT ANEMIA OR OTHER CACHEXIA.

C. G., unmarried, forty-nine years of age, was admitted to the Long Island Hospital June 8, 1901. Nothing of his family history bearing on the present condition was obtained. He had had typhoid fever when a young man and in 1882 syphilis, for which he was treated with apparent success. Since 1888 he had taken alcohol in excess.

About three years before entrance to the hospital he noticed a dull, constant pain which occupied small areas at the front of the abdomen at the level of the umbilicus. He did not notice any pain in his back. He had no nausea. He took medicine which seemed to improve the condition but led to a facial eruption. At the end of a year he was relieved of this pain, but in the summer of 1898 he noticed a cold area about the size of a hand just below both knees. This gradually enlarged and a feeling of numbness supervened in the cold areas. His feet became involved in the sensory disorder and he felt as though "walking on a thick carpet." In the winter of 1899 paresthesia of the legs developed, and his knees felt as though "in a vise." These disorders of sensation involved the legs from below upwards. During this period and up to April, 1900, he was able to walk steadily, whether in light or dark, and had no disorder either with his sight or handwriting. Since that time, however, his eyesight had gradually failed, so that at the time of entrance to the hospital he was wholly unable to read. His fingers had also begun to feel clumsy and cold, but there was no paresthesia or numbness of the arms. His handwriting became much impaired.

In February, 1901, he noticed a feeling of cold which gradually extended from the legs up to the level of the nipple. Up to six months before entrance he was able to walk, then gradually lost power in his legs until they were practically totally helpless. He had no disturbance of deglutition or articulation.

Physical examination showed a poor reaction on the part of the pupils both to light and with accommodation. His vision was poor. He could not count fingers at a distance of ten feet, nor could he read ordinary type. Lungs and heart were normal. A slight fibrillary twitching was noted over the pectoral region and in the muscles of the upper arm. His hand grasp was good, but there was general disturbance of temperature sense over the body and arms. His legs and toes could be moved very slightly. His legs took a semi-flexed position. Knee jerks were very much increased, ankle clonus and Babinski reaction were present. The tactile sense also showed some impairment. Later a marked disturbance in control of the sphincters came on and a certain mental failure became apparent. The Hgb. was 60%, whites, 12,800; reds, 5,284,000.

On June 28, 1901, it was noted that the patient was progressively failing both physically and mentally. He had become emaciated, was dirty in his habits and practically helpless. He died July 8, 1901.

Autopsy (01.71 lv,) by Dr. G. B. Magrath, July 9, 1901, twenty-one hours post mortem. There was slight sclerosis of the coronary arteries and some old fibrous adhesions in the pleural cavities, but beyond this, outside of the nervous system, nothing noteworthy. The brain showed slight edema, weighed 1,300 gms., and there was apparently slight atrophy of the first two frontal convolutions. The arteries at the base of the brain, circle of Willis and the vertebrals, showed a high degree of arteriosclerosis. All the vessels showed alterations of the lumen, irregular thickenings of the walls, and hypertrophy of vessels upon which depended the establishment of collateral circulation. The vertebral arteries were very unequal in size; the continuation of the basilar into the posterior cerebrals was practically interrupted at the bifurcation, the circulation in the distribution of the posterior cerebrals being effected by the posterior communicating

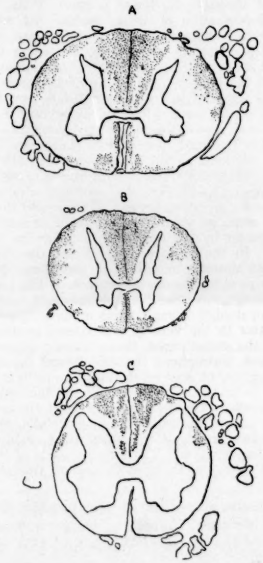


FIG. 1. Case I. A, cervical; B, thoracic; C, lumbar, showing diffuse lesions in a case without anemia. Accurate tracings, Edinger drawing apparatus.

arteries from the middle cerebrals. The communicating arteries were much hypertrophied in consequence. Alterations of the ventral branches of the circle of Willis were less marked, though showing similar changes in the walls to the dorsal branches.

Sectioned frontally, the brain showed, especially in the region of the internal capsules and in the lenticular nuclei, a very marked tendency to the formation of small cysts, most of them less than one mm. in diameter. This condition was much less marked in the white matter and no such cysts were observed in the cortex. The cerebellum gave slight evidence of arteriosclerotic change.

Examination of the spinal cord in gross showed some diffuse degeneration in the dorsal and lateral columns.

Microscopic examination. Sections from the brain cortex, capsule, pons, oblongata, optic nerve and spinal cord were cut and stained by the usual methods. The *cerebral cortex* from the right frontal region and the paracentral lobule showed no striking alterations. The pia varied somewhat in thickness at various points and in places showed considerable infiltration with blood; there was no general atrophy of the cortex, and the blood vessels showed no evidence of endarteriitis, or of hyaline or other degeneration, though the walls were generally thick. The *optic nerves* (Marchi) gave no evidence of myeline degeneration.

The *internal capsule* showed a high degree of general arteriosclerotic change, very much more marked than in the cortex, where the blood vessel lesions, as stated, were slight.

The *pons* was normal except for vascular changes, less in degree than in the capsule, but yet very apparent.

Beyond a very decided thickening of the arterial walls, the *oblongata* presented nothing abnormal. Especially to be noted was the complete absence of the type of degenerative change seen in the cord.

Cord. In general the lesions of the cord corresponded to those frequently described in diffuse, combined degeneration, in being most marked in the cervical and thoracic regions with degenerations in the dorsal, lateral and ventral tracts, and diminishing markedly in the lumbar region with a more definite limitation to the dorsal columns. At a level through the lower portion of the pyramidal crossing degeneration of white matter did not appear. In the cervical enlargement the lesions were pronounced and of characteristic appearance, involving the dorsal columns, particularly in their central portions, the lateral portions of the cord in the regions of the cerebellar tracts and to less degree of the pyramidal tracts, and the area on either side of the ventral fissure but beyond the limits of the uncrossed motor tracts. The degeneration here, as elsewhere in the cord, was of two characters, — a dense neuroglia sclerosis, most evident in the columns of Goll, and a degeneration with small overgrowth of neuroglia and the formation of vacuoles. Fat granule cells were abundant in the degenerating areas.[1] The lesions in the thoracic region were, in general, similar in distribution though slightly greater in extent than in the cervical portions of the cord. In the lumbar enlargement the degeneration was limited almost exclusively to the dorsal tracts, with narrow strips along the dorsal septum. The areas adjoining the dorsal commissure and the root zones spared. There were doubtful small areas of disintegration of the white matter in the ventral and lateral portions of the cord. In the sacral region there were no alterations.

Nerve roots throughout the spinal cord showed no sign of degeneration at any level studied, nor was there evidence of myeline or cell degeneration in the ventral horns.

Blood vessels. The vessels throughout the cord showed in certain places somewhat thickened walls, which could not be shown to stand in causal relationship with the areas of degeneration. The larger vessels of the pia and the ventral artery of the cord showed no alterations.

The essential points in the pathological anatomy of this case, therefore, were marked arteriosclerosis of the circle of Willis and the arteries of the internal portions of the brain — internal capsule; diffuse quasi-systemic degeneration of the cord involving dorsal and lateral tracts, most extreme in the thoracic region; freedom from degeneration of nerve roots and gray matter; these lesions occurring in a patient who had not suffered from pernicious or grave secondary anemia, and who, so far as known, was not the victim of a cachexia of any sort.

The clinical history of this case is sufficiently explained by the pathological alterations. Syphilis and alcohol may have had some bearing on the widespread alterations of the vessels, but cannot be brought into direct causal relation with the main lesions in the cord. The early disturbance of sensibility is in accord with the usual history of these cases, followed by increase of deep reflexes and increasing incoördination, gradually leading to a condition of complete paraplegia. The marked increase of knee jerk in spite of predominant lesions in the dorsal tracts is worthy of mention. Disturbance in vision was, no doubt, due to refractive error rather than to optic nerve atrophy, as shown by the microscopic study of the nerve. The case, in general, is a perfectly typical one of diffuse combined degeneration associated with arteriosclerosis in a person not suffering from pernicious or secondary anemia, or so far as discovered from any other wasting or debilitating disease. It is of interest in comparison with the following case in which pernicious anemia was a conspicuous feature of the clinical picture, and in which similar though somewhat more circumscribed lesions were found, and also as pointing to the fact that this general type of disease may and no doubt frequently does occur as a primary cord lesion, irrespective of accompanying conditions, with which it has usually been associated.

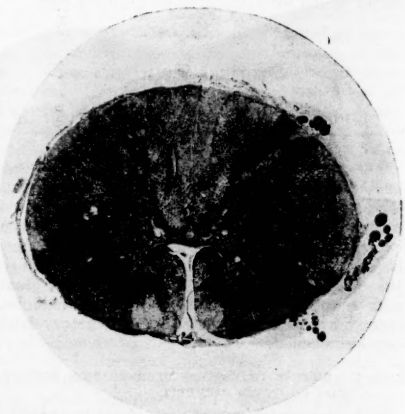


FIG. 2. Case I. Lower cervical region. The diffuse, non-systemic character of the degeneration is evident; areas about ventral fissure suggest focal vascular lesions; nerve roots normal.

[1] For details of this peculiar alteration see Putnam and Taylor: Journ. Nerv. and Ment. Dis., xxviii, 1, 1901. This lesion had also been previously described by others, with a somewhat different interpretation.

CASE II. DIFFUSE (COMBINED) DEGENERATION WITH PERNICIOUS ANEMIA.

H. R. (Massachusetts General Hospital, O. P. D. No. 20213), a women sixty years old, unmarried, a seamstress, was well up to the spring of 1900 except for occasional attacks of rheumatism. She then began to have sensations of numbness in the fingers, but not affecting the body or the arms. In spite of the fact that her fingers felt as if "asleep," she was able to sew and make highly coördinated movements. In July she began to have similar sensations in her toes, which gradually spread until in October the whole of both legs was involved. Excepting for the numbness she considered herself perfectly well. There was no disturbance in walking. Her appetite was good and her bowels regular; nothing of importance was learned regarding her family history. Seen Oct. 8, 1900, she had an anemic appearance, and her gait was slightly ataxic. Heart and pupils showed no abnormality. The knee jerks were slight.

A *blood examination* Nov. 20 gave the following results: — Hgb. 25%; red cells, 1,850,000. Differential count of 500 white cells; — polymorphonuclear neutrophiles, 71.8%; basophiles, small 25.2%; basophiles, large 1.6%; cosinophiles 1.4%. In the white count two megaloblasts and four normoblasts were seen. There was considerable poikilocytosis; many oval forms; an excess of macrocytes; some microcytes.

On Dec. 5 a note was made that the legs were very rapidly becoming weak and ataxic so that the patient was able to walk but a few steps at a time and very unsteadily. Dec. 18 she entered the New England Hospital, remaining until April 29. During that period, under general tonic and hygienic treatment she improved considerably.

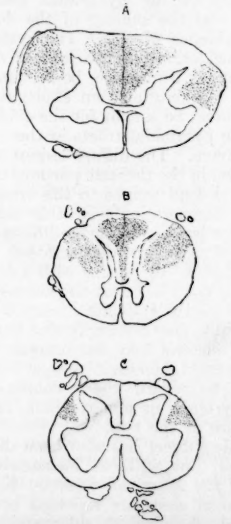


FIG. 3. Case II. A, cervical; B, thoracic; C, lumbar, showing somewhat circumscribed lesions in a case with pernicious anemia. Accurate tracings, Edinger drawing apparatus.

A second blood examination showed a still further reduction in the red cells with poikilocytosis, Hgb. 45%, and 14,000 white cells.

After leaving the hospital she began again to fail, although her appetite remained good. She became more ataxic and by the middle of July could not move her legs while in bed, and very imperfectly when sitting in a chair. She could not stand alone. Her bowels were very constipated, with about one movement a week, in spite of attempts at catharsis. Aug. 15 without warning she fell, was taken up unconscious and remained so for several hours. She was then delirious and helpless; vomited once or twice and had excessive diarrhea for several days. She failed rapidly and died Aug. 30, without recovering complete consciousness.[2]

Autopsy Sept. 1, 1901, by Dr. E. E. Southard. Examination of patient limited to the spinal cord. Extradural plexuses not injected; fat-tissue edematous. *Dura*, normal above, swollen to twice its size below by a movable mass of clear colorless fluid. Intradural attachments of cord, normal. *Pia*, pale, moist, of normal appearance, except in lower third, which shows the usual injection of post mortem origin. On section of the cord, microscopic evidence of lesion doubtful. No striking alterations of horns in size or shape. Gray matter soft and slightly retractile on section. No apparent alteration in distribution or amount of white matter. Color and consistency normal, except in lower dorsal region and upper portion of lumbar enlargement, where, in the dorsal columns, there is a vaguely limited area, 2 by 3 mm. in diameter, oval in cross-section, and bisected by the middle third of the dorsal septum, showing pinkish-gray color with slight if any loss of consistency. *Nerve roots*, normal.

Bulk of cord preserved in 4% formaldehyde solution. Specimens from each of three levels preserved in 95% alcohol, in Zenker's and in Mueller's fluids.

Microscopic examination. The spinal cord was stained by the usual appropriate methods and gave the following series of changes: — In the cervical region degenerations of white matter were sharply limited to the dorsal and lateral tracts, occupying a central area in the dorsal columns, including the columns of Goll and a part of the columns of Burdach, except at the dorsal periphery, where undegenerated fibers were interposed. The lesions were of the two characters frequently described, a fairly dense neuroglia sclerosis toward the centers of the degenerated areas, bounded by areas containing many vacuoles, and unproliferated neuroglia, with numerous fat granule cells, presumably being a more recent stage of the process than

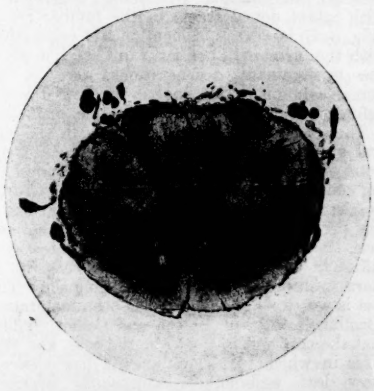


FIG. 4. Case II. Thoracic region, quasi-systemic degenerations of dorsal and lateral tracts in pernicious anemia; dorsal nerve roots normal. The apparent ventral degenerations are due to slight defects in staining, exaggerated in the reproduction.

the denser portions. The degenerations were not limited to neurone systems in any portion of the cord involved. In various portions of the thoracic region the lesions of the white matter were the same in general distribution, the more complete sclerosis being in the columns of Goll and in the crossed pyramidal tracts. The lesions in the lumbar enlargement were noteworthy from the fact that they were confined to the crossed pyramidal tracts, and had all the appearances of a simple secondary degeneration. (Fig. 3, C.) The far more usual degenerations in the dorsal columns (see previous case, Fig. 1) were wholly lacking.

[2] For many of the facts in this case we are indebted to Dr. Annie Hamilton.

The *gray matter* showed no noteworthy alterations, other than hyperpigmentation of cell bodies.

The *nerve roots* throughout the cord were normal, both ventral and dorsal.

Blood vessels external to the cord in the pia showed no abnormality. The vessels in the cord were for the most part distended with blood, but beyond a possible slight thickening of the walls were normal. There were no signs of inflammatory reaction in the neighborhood of vessels. A definite relationship between lesions of the white matter and vessels could not be demonstrated by the histological appearances.

The points of chief pathological interest in this case were:

Lesions of the spinal cord in a person dying presumably of pernicious anemia, sharply limited to dorsal and lateral columns of the cord, but not anatomically confined to neurone systems; no noteworthy alterations of nerve cells of ventral horns; no general changes in the blood vessels either without or within the cord; no degeneration of nerve roots.

On the clinical side the case presented the type of symptoms often seen; vague at first, chiefly characterized by paresthesiæ, gradually leading up to a very considerable degree of ataxia, with final inability to stand, due, no doubt, to the combined dorsal and lateral cord lesion — ataxic paraplegia. It is to be observed that during the course of her illness of something over a year there was at no time a sharp exacerbation of symptoms. Slight knee jerks in the presence of marked pyramidal degeneration with intact dorsal tracts in the lumbar region (Fig. 3, C) is worthy of mention and comparison with the increased knee jerks in Case I, in which the predominant degenerations were in the dorsal columns. The final collapse two weeks before death, however, remains unexplained.

These two cases evidently belong in the general group of the diffuse (combined) degenerations of the cord, the most striking accompanying condition in the first case being general arteriosclerosis and in the second a fatal anemia of the pernicious type. The lesions of the first case, though in general similar, were much more diffuse in character than those in the second, and more widespread, though less compact. This fact is worth noting since it has been maintained (Bastianelli, Russell, Batten and Collier, Spiller) that the converse is apt to be the case, and that cases in which pernicious anemia has occurred show less well-defined, apparently systemic alterations. The association of arteriosclerosis with the lesions of combined degeneration has not been frequently reported and its occurrence in this case is no doubt to be regarded as a coincidence rather than a causal relationship, particularly since the vessel changes were much more conspicuous in the brain than in the cord, whereas the diffuse nerve lesions were, as is usual, practically limited to the cord. In general we are strongly inclined to the view expressed by Russell, Batten and Collier that anemia, arteriosclerosis and the various other concomitant conditions associated with this now well-defined type of nerve degeneration are not etiologically significant, and that a common but as yet unknown cause lies behind, which, recognizing the vagueness of the term, we may call a toxemia.

Since the publication in 1901 by Putnam and Taylor[3] of a paper on "Diffuse Degeneration of the Spinal Cord," containing a general though by no means exhaustive review of our knowledge of these lesions, a considerable number of articles have appeared bearing directly on the subject. In a carefully reported case, Pickett[4] discusses various matters pertaining to the general questions involved in the combined degenerations, criticises the term "diffuse degeneration," used in a previous article,[5] as inadequate, and insists that the process is, at least, partly systemic, and that we have to do with two processes, one systemic and the other diffuse, a view also held by Russell, Batten and Collier. This is evidently merely a matter of terminology. A process must be either systemic or non-systemic as we use the term "system," as applied to neurones, and not merely to circumscribed areas in the cord. There is not sufficient evidence, as yet, to show that in these conditions the pyramidal tracts or the peripheral sensory neurones are degenerated as independent systems, although the superficial appearances are often suggestive of such limited lesions. The usual abrupt ending of the degeneration of the pyramidal tracts in the oblongata and the sparing of the dorsal nerve roots is evidence of this. The systemic character of the lesions in the lumbar or thoracic regions may, in a measure, be accounted for by secondary degenerations, an explanation which, no doubt, must be sought for the evident alterations in the pyramidal tracts in the second case reported above. The diffuse lesions are usually most marked in the thoracic portions of the cord, which would lend weight to this supposition of secondary degeneration. In this sense, therefore, that the lesions are partly diffuse and partly the result of secondary degeneration, it may be admitted that we are dealing with a double process, but it is not clear that the lesions are partly diffuse and partly systemic in any other sense. This, naturally, does not imply that true systemic combined sclerosis may not exist in which the diffuse element is lacking. A safer basis for the present is to regard these combined lesions either as systemic or non-systemic, rather than as a mixture of the two.

The whole subject has also been discussed in much detail, but with an inexcusable neglect of much of the American work by Kattwinkel.[6] Eight personal cases are reported both on the clinical and pathological side, and a further observation of Kremer's is added. The cases are of the general type of combined degeneration, for the most part without sharp limitation to recognized fiber tracts, and the author takes occasion to discuss at length the difficulties of diagnosis when both dorsal and lateral tracts are involved, and the frequency of symptoms point-

[3] Putnam and Taylor: Loc. cit.
[4] Pickett: Medicine, viii, 740, 1902.
[5] Loc. cit.
[6] Kattwinkel: Deutsch. Arch. f. klin. Med., lxxxv, 37, 1902. Dana's work is given due credit in this paper, but Putnam's is not mentioned.

ing toward tabes in spite of degenerations beyond the sensory systems. On the etiological side Kattwinkel lays much stress upon the work of Marie regarding the vascular arrangement in the cord, and also upon the less known work of Guillain and others in determining the course and relations of the lymph channels. From this investigation it appears that the arrangement of the lymph spaces in relation to the meninges and blood vessels is such that a stasis of lymph takes place with greater readiness in some parts of the cord than in others, in the presence of alterations of the blood vessels, or in certain instances even in the absence of visible vascular changes. This combination of dilatation of lymph spaces and consequent lymph stasis and vessel changes, he holds responsible for the alterations observed in the diffuse combined lesions of the cord. The two findings were practically constant in the cases cited. So far as we know, this conception of the function of the lymph system in producing these degenerations has not been maintained by other writers. It needs further verification before being generally accepted.

A case has also been reported by Rheinboldt [7] from Hitzig's clinic, of so-called " combined system disease," in which the literature is again reviewed in great detail, but imperfectly, and conclusions drawn which add little of significance to our knowledge of the subject. The distinction made that cases with slight anemia are particularly associated with diffuse sclerosis of systematic distribution, as contrasted with the more irregular distribution of the lesions in fatal anemia, does not conform to our experience. We have in the examination of such cords found absolutely no changes which can be regarded as distinguishing the various types of cases.

Frank Billings, in the Shattuck Lecture [8] before the Massachusetts Medical Society for 1902, presented an important contribution to our knowledge of the cord and oblongata lesions following or associated with pernicious anemia. Billings is inclined to accept the term " diffuse degeneration " as a sufficiently exact pathological statement of the conditions found, and regards it as highly probable that in cases of pernicious anemia the hemolysis and the diffuse cord degenerations are due to the same toxin.

Burr, in conjunction with McCarthy, has reentered the discussion of the " postero-lateral scleroses " with a report of eight additional cases,[9] and makes a classification of these lesions into eight groups, which he thinks may for clinical and laboratory purposes be sufficiently differentiated. Such a classification seems to us rather more elaborate than our present knowledge warrants; it is, at least, apparent that the transitional forms of disease of this type are so numerous that sharp categories are to be maintained only with great reservations. An essential distinction, if it can be demonstrated, is between true combined parenchymatous neurone degenerations and lesions from the outset diffuse in character. Burr and McCarthy are apparently of the opinion that such a distinction may be made even excluding Friedreich's ataxia and the combined lesions occurring in dementia paralytica. Their group 8 seems to come in this first category, whereas under group 6 are included those cases in which in our experience a much larger proportion of all the combined lesions are found. Oppenheim still maintains the existence of a true combined systemic neurone disease and is inclined to place in a distinct category the type of case described by Russell, Batten and Collier.[10]

In general, so far as we have followed the work done since the publication of the former paper alluded to, there seems no sufficient reason for altering the statement then made that no fundamental characteristics of the lesion have been found depending on different causes, and that for the present the term " diffuse " or, to be more specific, " diffuse combined degeneration," is a sufficiently exact designation of the usual anatomical alterations. This naturally excludes the cases, in the post-mortem study of which we have as yet had no experience apart from Freidreich's disease and dementia paralytica, in which true systemic degenerations of lateral and dorsal tracts may take place.

Finally certain evidence appears to be accumulating that cases which present during life a high degree of spasticity with slight ataxia, implying extreme degeneration of the lateral tracts are more chronic in their course than those with early and marked ataxic symptoms. A number of cases recently observed by us clinically and after post-mortem study, as well as the experience of others bears out this supposition.

[7] Rheinboldt: Arch. f. Psych., xxxv.
[8] Billings: Bost. Med. and Surg. Journ., cxlvii, 225, 1902: also Trans. Mass. Med. Soc'y., 1902.
[9] Burr and McCarthy: Journ. Nerv. and Ment. Dis., xxx, 14, 1903.
[10] Loc. cit.

HISTORICAL NOTES ON THE LAWS GOVERNING CIVIL MALPRACTICE IN THE ANCIENT TIMES AND THE MIDDLE AGES.[1]

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

THE question of civil malpractice is of interest to both the medical and legal professions, and of recent years many rather unusual cases involving medical liability have been tried in various courts of the United States. That the physician or surgeon have been held liable for their actions by the courts of justice is as old as law, and it occurred to the writer that publishing a few scattered notes he had made on the history of this subject might not be without interest, although he must concede that the question consigned in the following pages is only superfically discussed.

Among the Egyptians the law punished very fully any too imprudent or audacious physician, and in the seventh volume of his " *Histoire de la Legislation* " De Pastoret says that " general

[1] Read by invitation at the Annual Meeting of the Massachusetts Medico-Legal Society, June 9, 1903.

rules had been established for the treatment of patients. These were the result of carefully made observations which were guarded by the priests in books that were so respected that they were solemnly carried in the processions taking place on days of public fête. An absolute prohibition did not exist preventing a physician from applying a new truth, but if, far from obtaining the salutary effects that he expected to procure he caused the death of his patient, he was obliged to pay his tribute for the misfortune or the boldness of having sacrificed the life of a citizen, by being beheaded. On the other hand, he was never liable to a patient confided to his care when he followed the rules laid down in the sacred books."

The same authority says that the Greeks also admitted medical liability, and Tourdes quotes an example related by Plutarch of a certain physician of Ephesis, by name Glaucus, who, having left his patient to go to the theater, was condemned by Alexander to be put to the cross, because the patient, having imprudently eaten during his absence, died.

In Roman law the principle of medical liability was admitted, and this is proof positive since it is so formally stated in the old texts. This can easily be understood, since at Rome any one could practice medicine who so wished, and, generally speaking, the slaves practiced the healing art, which was a source of large income for their masters. These physicians, or perhaps it were better said empirical practitioners, had no other end than the gain of money, and there was, consequently, a double motive for making them liable for mistakes committed in the exercise of their practice. On the one hand, there was no guarantee offered by a diploma attesting to serious studies and a certain science, while on the other, there was a complete lack of devotion and scientific disinterestedness.

A physician who gave his services to a patient was responsible to the master if the latter were a slave, and he fell under the jurisdiction of a suit *lege Aquilia*, or under the application of suit for the hire of labor. The first clause of the law Aquilia covered in point of fact by those cases where another's slave had been killed without right. It was quite sufficient that a slave had been mortally wounded. The physician who, after having operated upon a slave, abandoned the after care and allowed him to die was at fault according to the terms of the law which ran as follows: " Præterea si medicus qui servum tuum secuit, dereliquerit curationem, atque ob id mortuus fuerit servus, culpæ reus est." [2]

There was also error on the part of a physician who by ignorance killed his patient by administering a medicine *mal à propos* and which caused the latter's death, as the following text shows: " Imperitia quoque culpæ admuneratur; veluti si medicus ideo servum tuum occiderit quod cum male secuerit aut perperam ei medicamentum dederit." [3]

Wounds which were not fatal but which were sufficiently serious to be damaging to the master of the slave were comprised in the third clause of the law Aquilia. The direct application of the law Aquilia was only allowed when the detriment resulting was caused *corpore corpori*, for example, when it was applied to a physician who had wounded or killed a slave by the performance of an operation upon the latter. But it was not applicable to the one who had only been the cause of the detriment, and who had not caused it by his proper body, as, for example, a physician who had prescribed a medicine *mal à propos*. In this case the *juris consulis* gave the application to the law, that is to say, introduced by interpretation, following the example of that of the law and procuring by the manner in which it was drawn up by the pretor the same results.

According to Accarias the professional services of a physician could become the object of a hire of labor when it was a question of a slave, and Proculus declared that a physician who had badly cared for a slave could be sued either *ex lege Aquilia* or *ex locato*. The following is the exact text: " Proculus æit, si medicus servum imperite secuerit, vel ex locato vel ex lege Aquilia competeri actionem." [4]

The direct application of the law Aquilia could not be applied to a physician when the victim was a free man, and Ulpien says that " a man has not the right of ownership of his limbs." Now, in order to obtain a direct application of the law Aquilia, it was necessary that the person injured should have also his patrimony involved. But a free man who had become the victim of errors committed by a physician could have the direct application of the law Aquilia accorded by the pretor who procured the same effects, excepting in that which concerned the pecuniary reparation of the injury. In the latter case the value of human personality was not considered. The reparation could only include the tort resulting from expenses involved for the cure, from incapacity to work and, lastly, the funeral expenses.

Now, although the texts are perfectly affirmative regarding the admission of the principle of medical liability in Rome, it is more difficult to say whether or not it was frequently applied, and it would appear that the contrary was more likely the case if one considered with what violent indignation Pliny affirmed that in Rome a physician enjoyed the most complete impunity as he states in the 29th book of his " Natural History," as follows: " Nulla præterea lex, quæ puniat inscritian; capitale nullum exemplum vindictæ. Discunt periculis nostris, et experimenta per mortes agunt: medicoque tantum hominem occidisse impuniter summa est. Quin imo transit convicium et intemperantia culpatur: ultroque qui periere arguuntur."

The Roman laws were not, however, as severe as Montesquieu has upheld in his immortal work entitled " *Esprit des Lois*," in which he says " that the people were desirous of having physicians punished for their negligence or their ignorance. In this case they condemned a physician who

[2] Instit. Liv., iv, tit. iii, § vi.
[3] Instit. Liv., iv, tit. iii, § vii.
[4] D. Liv., ix, tit. ii, vii, § viii.

occupied a certain social position to exile, while death was the sentence applied to the one occupying a lower social condition." This great writer committed an error, for the law to which he makes allusion,[5] "*Ad legem Corneliam de Sicariis* . . .," did not punish negligence, ignorance or lack of attention, but the *crime*, the grave mistake committed with the criminal intention of producing death.

Medical liability was rigorously followed out in the ancient Germanic law, to such an extent that before undertaking the cure of a patient the physician was obliged to give a security in order to guarantee the indemnity in case he was unsuccessful. A physician who while bleeding a free man wounded him, was obliged to pay his family a compensation of one hundred and fifty ducats in gold. In case of the death of the patient, the physician became the property of the family, who could use its right of vengeance as it saw fit. ' Si quis medicus, dum fleotomiam exercet, ingenuum debilitaverit. CL solidos coactus exolvat; si vero servum hujusmodi servum restituat (in lege Ervigiana post exolvat leguntur: si vero mortuus fuerit proprinquis continuo tradendus est ut quod de eo facere voluerint habeant protestatem."

A physician could not bleed a free woman unless her husband or some of her near relations were present, because the law said: " Difficillium non est sub tali occasione ludibrium interdum adscrescat."

In Beugnot's edition of the " *Assises de Jérusalem*" will be found many important remarks regarding the liability of physicians in the middle ages.[6] A physician called to attend a serf, and by his ignorance causing the death of his patient, was condemned to pay the value of the serf and was obliged to leave the city, and I here quote an interesting paragraph:

" C'il avient par aucune mésaventure que je naffre un mien serf ou serve, ou aucune autre personne le naffre, et je i amène un meige et celui meige s'accorde o mei a pris noumé et me dit au tier jor, puisqu'il ot bien veu la plaie, que bien le garet sans faille; et il aveint puisque il le tailla malement ou por ce que ne devet étre taillé et il le tailla et porce il mourut et porce que it devet tailler la blaie par la levure et l'apostème donc et il le tailla de travers et por ce mourut: la raison juge et commande en ci a juger que celui meige doit amender le serf ou la serve par droit tant comme il valait au jour qu'il fut naffré, ou tant comme l'acheta celui de qu'il estait car c'est dreit et raison par l'assise. Et deit la cort celui meige congeer de la vile ou it fist cele mauvaise megerie."

According to this text the physician after having seen the wound promised to cure the patient, but following a badly conducted operation which resulted in the death of the patient, the physician was declared liable for this unfortunate occurrence. The text then goes on so as to cover those cases in which a wound became gangrenous because the physician did not give the patient daily attendance, and it declares the former liable for this accident. In the same way it holds the physician liable for any imprudence committed by the patient, because he did not indicate in what ways the patient should care for himself. And, lastly, the text speaks of damages due in case the victim was a serf. The physician, after having promised to cure him, employed bad drugs and did not succeed in his object. The patient was maimed forever. The physician was obliged to take the serf for himself and to pay to his master the sum that the serf had cost him. In case the physician could not pay the entire sum, he was obliged to leave the serf with his master and only pay " celui serf ou cele serve vaura de mains por ce qu'il est mahaignes par sa coulpe."

When the victim was a free man the liability of the physician was very much greater. If it were a question of simple wounds or of bad treatment which did not cause death, not only the physician had no right to demand any fee but he had his right hand cut off. In case of death of the patient the physician was condemned to the gallows: " Mais se il avet se mahaign fait a un crestien ou a une crestienne, la raison juge qu'il det predre le poing destre et ne det plus estre damages for tant que c'il avet rien pris de celui por le meger si est tenus dou rendre par dreit. . . . Et se celui miege avet anci malement mege come est dit dessus aucun franc home ou aucune franche femme et elle en moret la raison juge que celuy meige det estre pendus et . . . it a det estre dou seignor par dreit. Mais ce il avait riens receu dou mort si det estre rendu as parens dou mort des choses dou meige car ce est raison et dreit."

The text adds that before being put to death the physician should be taken through the streets of the city in order to serve as an example to his colleagues.

It happened that, on account of fear regarding their liability, physicians refused their services to patients, or if they gave them they demanded a guarantee releasing them from any responsibility should the case terminate unfavorably. Guillaume de Tyr tells us that Amaury I, feeling that his strength was leaving him, demanded medicines from some Syrian physicians. These they refused, and he was only able to obtain them from the Latin physicians after he had given his promise that they need not be disturbed, no matter what issue the disease might take.

In the ancient French law the liability of physicians and surgeons was distinctly held. Denizart established a hierarchic difference between physicians and surgeons, and declared that the latter were subordinate to physicians. He admitted the liability of surgeons and declared them held for tort towards those they might maim by their ignorance, and attributes to physicians the power of examining the facts of the case in order to ascertain whether the surgeon was repre-

[5] D. iv, iii.

[6] The ideal type of feudal law is that so graphically depicted in the works which pass under the title of the Assises de Jérusalem, and which profess to describe the usages of that curious product of the Crusades, the Latin Kingdoms of Palestine.

hensible or not. He goes on to say that: " When a surgeon has conducted the case according to the rules of his art, he should be paid for his operations and for his care and dressings, although the patient may have not been cured, even if one was obliged at a later date to do an amputation of some fractured limb, the cure of which the surgeon had undertaken."

Efforts were made in France by Charles VI, Henry IV, Charles VII and Louis XIV to formulate laws to control the practice of surgery, but these were apparently only partially successful. It is not without some interest perhaps to add that, as far as I have been able to discover, Henry IV of France was the first to create what would at the present time be called a medico-legal expert. These experts were selected from among the most capable surgeons. It is also positive that about the middle of the sixteenth century certain cities appointed what might be termed expert surgeons, for the purpose of examining the wounds of patients seriously injured, and to see that the attending surgeon treated the case properly; for otherwise the patients could bring suit for tort should it be shown that there had been malpractice. That this is a fact will be found from the following quotation that I make from the treatise on surgery by Felix Wurtz, a noted surgeon of Basel, whose fame was widespread at about 1560:

" Un Chirurgien ne doit point permettre à un chqun de voir, ou mettre la main aux blessures de ses patiens, ce que neantomoins plusieurs ont accoustumé de jure. Ce n'est pas que je oeuille blasmer la couterme de plusieurs Villes bien policées, où les Magistrats font ordinairement visiter une jois, ou deux, touttes les blessures considerables, par les Chirurgiens jurez; au contraire, je soustient qu'elle est extremement necessaire et qu'elle se devroit establis par tout, enfin que si quelqe'un est malpensé, ainsi qu'il arrive assez souvent, il en puisse pacie ses plaintes à la Justice."

The mistakes committed in the rules of practice should be appreciated by men engaged in that profession, and Denizart quotes a judgment which acquitted a surgeon who was accused of having given bad treatment, only after having heard the testimony of expert surgeons. The case was as follows: A surgeon sued a patient, who had a broken arm, for the payment of his fee. The arm had either been set badly or too early and, having been inconsiderately moved by the patient gangrene appeared. The patient refused to pay the bill. The court then ordered some expert surgeons to examine the question as to how the accused had acted and if the operation and his dressings were in conformity to the rule of his art. After having heard the declarations made by both the surgeon and the patient, they returned a verdict in favor of the surgeon, and as a final consequence the court ordered the patient to pay the surgeon's fees. This same writer mentions another case where the surgeon was sued in the criminal court and was condemned to pay fifteen thousand pounds damage and interest, because the ignorance of the surgeon was proven by the findings of the experts called in on the case.

Charondas, a well-known lawyer who flourished in the middle of the sixteenth century, said that a surgeon was liable for accidents which might occur to his patients if they came from his mistake. He mentions a case of a surgeon who was taking care of a patient afflicted with a venereal ulcer, but an accident occurred during the treatment which caused the death of the patient. For this mishap the surgeon was brought to justice as having been the cause of the death. Charondas during the trial held that since neither deceit nor ignorance on the part of the surgeon could be shown in the treatment employed for the cure of the ulcer, the surgeon could not be held responsible for the accident which occurred later.

Papon, a well-known judge who lived during the regency of Catharine de Medicis, says, that although a patient may die, the physician should not be held liable unless he was found ignorant or too hardy in his treatment, and that consequently a legal examination should be held in order to ascertain the true circumstances of the case, and if the physician is found to have committed a mistake he should be punished by the courts. This same author then relates the case of a physician who gave a potion to a patient which was either capable of killing him or saving him in a very short time, and the patient died from its effects. The physician was, however, easily acquitted, but he was admonished by the court never to repeat the same treatment again under penalty of being severely punished.

Jean Duret, a physician of some note who lived during the last half of the sixteenth century, declared that a physician was liable if he showed himself an idiot in both the theory and practice, or if he showed himself too audacious, and Raymond de l'Eglise upheld that a physician was liable not only for his temerity and his neglect of a patient but also forhis ignorance as well. Brillon, whose classical dictionary was published in 1711, also upheld that physicians were liable for their acts. He based his opinion on Papon and another writer, who declared that a physician was liable either for a slight mistake or a very slight mistake, and he relates several judgments in which the principle of medical liability is upheld.

The public was far better protected against nostrums and quacks a few hundred years ago than it is at the present time, as will be seen from the following: In the reign of Edward VI, Grigg, a poulterer in Surrey, was put in the pillory at Croydon and again in Southwark, for cheating people out of their money by pretending to cure them by charms, or by looking at them, or by casting their water. Many other quacks have at various times been subjected to punishment. Anthony was punished for his Aurum Potabile; Arthur Dee for advertising medicines to cure all diseases; Foster for selling a powder for the cure of chlorosis; Tenant, a urine caster, who sold pills at six pounds apiece; Aires, for selling purging

sugar plums; Hunt for putting up bills for the cure of diseases in the streets. The council in the reign of James I dispatched a warrant to the magistrates of the city of London to arrest all reputed empirics, and cause them to be examined by the censors of the Royal College of Physicians. Several were arrested and acknowledged their ignorance. In the reign of King William a certain Fairfax was fined and imprisoned for injuring persons by his Aqua Cœlestis, while in Stow's chronicle it is recorded that a water caster was punished for exercising his quackery. He was set on horseback with his face to the horse's tail, which he held in his hand, with a collar of urinals about his neck, led by the hangman through the city, and was whipped, branded and then banished.

The old French jurisprudence felt some hesitation in pronouncing for or against medical liability, and Merlin believed that suits brought against physicians were rarely successful. He mentions a number of judgments which acquitted the physician. The parliament of Paris in 1696 gave the following judgment in one case, the court saying: " That surgeons are not liable for their remedies as long as they have showed no evidence of ignorance or rashness in their practice." And in summing up the case on which the court had rendered judgment, the Advocate-General Portail said: " There is only one case where suit can be brought against the medical profession, and that is when deceit had been practiced, in which case it is a true crime."

In 1596 the children of a surgeon, who had wounded a patient while bleeding him, were condemned to pay 150 pounds damages by the Parliament of Bordeaux, and in another case a surgeon was condemned, because he cut a child for stone in the bladder without the advice of a physician, to pay damages amounting to 60 pounds, with the injunction of the court never in the future to cut another patient for stone without the consent of some physician who was approved by, and who had been received by, the faculty of medicine.

Many other cases could be cited, but I think from what has been said in this short paper that medical liability has been sustained by all the courts of former times. The question of criminal malpractice I have entirely left aside hoping at a future date to discuss the history of this important subject.

THE BITZER HOMICIDES.[1]

BY GEORGE P. TWITCHELL, M.D.

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Louis Bitzer, thirty-six years of age, a jeweler by trade, in 1901 lived in Turners Falls. His place of business was on the main street of the village, and he lived on a side street a short distance from his store. His family consisted of his mother, his wife and three children, Anna, fifteen years of age, Caroline ten, and Louis Martin, five.

Ida Columbe, seventeen years of age, worked in the store for Bitzer as clerk or saleswomen. On the morning of Dec. 31, 1901, Ida went to the post-office to get the ten o'clock mail; when she got back they started to put away the Christmas goods in the back room. Bitzer had two revolvers, one of 32 and the other of 38 caliber, lying on a table in this room. Ida told him to put them away as she was afraid of them.

He opened one to see if it was all right and when he closed it it accidentally went off and shot the girl. When he saw that he had shot the girl he felt that he could not bear to be pointed out by people as one who had done a crime but had rather be dead himself, yet he did not want to die and leave his children, so he went home to take them with him and kill himself. Before leaving the store he wrote a statement of the accident on a large sheet of brown paper. What he subsequently did he does not remember, but he did go to his house and shot his wife, his two daughters, and his son; the boy, who was in bed recovering from an attack of measles, was killed and the others more or less seriously wounded; all recovered. He was disarmed by his wife, sister-in-law and mother and shortly afterward was arrested. He told his mother that he had shot Ida Columbe. At the station house he gave to one of the officers the statement he had written at the store. It was as follows:

> Starting in to work, Ida and myself putting goods away which were left over from Christmas, I put away my revolver which I have taken home with me nights to protect myself and Ida late at night. Looking it over and closing it up it went off accidentally and killed the poor little girl. For Heaven's sake don't blame me about it. The moment it went off I thought by myself what will become of my dear wife and children, so I do not want to be looked upon as a man thinking that he committed a crime, so I will die for it, and I cannot die without having my poor children with me. Take us all to church and sing our last farewell, 'Nearer my God to Thee.' Farewell to those who have loved us. Have John Gould take care of our bodies. My business affairs, write to Mr. Wm. S. Dana and J. Aschin, 43 Maiden lane, and the two gentlemen will look after my business affairs. Everything I leave behind will be for my dear old mother and Martin.
>
> I for my last words, sitting here and write this pitiful letter, wish you all good luck. This is a sorrowful thing but it must be done, and O My God don't blame me for it.
>
> I wish my dear old mother and brothers good-by.
>
> Your beloved Louis Bitzer.

About 12 o'clock I first viewed the body of Ida Columbe. In the back room of Louis Bitzer's store I found her, lying on the floor on her back, the legs fully extended, the feet about three inches apart and resting on the heels, the forearms flexed and the hands resting on the chest. Her head was slightly turned towards the right and rested on a man's ulster, which was arranged as a pillow. She was fully dressed, without her outer garments; the clothing was all in good order, the skirts covering the tops of her shoes and fully extended under her body; her underclothing orderly arranged. Blood was about her mouth and nostrils, smearing the side of her face and neck and upper part of her blouse and

[1] Read at the Annual Meeting of the Massachusetts Medico-Legal Society, June 9, 1903.

a little on the ulster. A penetrating wound was in the head, in the hairy scalp, just in front of the left ear. Lying on the floor, on the left side of the body near the knee, was a hairpin with a velvet knot on it. One hair ribbon was on the head and another was found under the buttocks when the body was removed.

The body lay in the comparatively narrow space between the table and safe, with the feet about one foot from the front of the sink. This was an iron sink, open underneath, and from about six inches under the sink, extending nearly to the heels of the body, were two nearly parallel marks or scratches on the floor. There was a mirror hanging over the sink on the wall, and a comb lying in it. Her hat, outer garments and chatelaine bag were on the table.

The autopsy showed a well nourished young woman, 4 feet 11½ inches in height, weighing probably about 115 pounds. Blood was about the mouth, nostrils, left side of the face and in the hair on the left side of the head. One inch anterior to the highest point of the left ear was a penetrating wound, the edges of which were blackened and burned. The hair around the wound was singed and brain substance oozed from the wound.

On removing the brain the course of the bullet was found to be on a line parallel with the horizon; the bullet passed entirely through the brain and was reflected back and was found in the right lateral ventricle. The organs of chest, abdomen and pelvis were normal. Her hymen was intact.

Autopsy on Louis Martin showed that the bullet entered through an opening in the left parietal bone, bordering on the coronal suture and two inches from the union of the coronal and sagittal sutures, passed superficially through both hemispheres and broke out a triangular piece of bone from the parietal bone on the right side at its eminence. The bullet was found in the substance of the brain directly under this loose fragment of bone.

Both lobes of the left lung and the lower lobe of the right lung were congested. Pleuritic adhesions were in the left thorax. All the other organs were normal.

After an indictment for murder had been found by the grand jury against Bitzer, the district attorney requested Dr. Frank W. Draper to conduct experiments to determine at what distance the revolver must have been held to singe and burn the hair and scalp. I had the pleasure of being present at these experiments.

The same revolver and similar ammunition were used, namely, the one of 32 caliber. The targets were various places on the hairy scalp of cadavers. At a distance of 6 inches the hair was not singed; between 3 and 4 inches the results were similar to what I saw on the head of Ida Columbe. I understand experts, employed by the defense, found they could singe hair at a very much greater distance. They used wigs as targets and the question arises as to whether that might make a difference in the results.

Bitzer was examined by experts as to his mental condition. The case never came to trial. The plea of murder in the second degree was offered and accepted by the government.

MALARIA AND MOSQUITOES OF WORCESTER. A YEAR'S OBSERVATIONS ON THE HABITS OF CULEX AND ANOPHELES.

BY WILLIAM W. MCKIBBEN, M.D., WORCESTER, MASS.,

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(Concluded from No. 25, p. 669.)

IN another puddle close by a few anopheles larvæ were found, lying like sticks flat on the surface with the two short respiratory syphons where the ears ought to be. By the aid of a lens they were seen to create a current towards the mouth by means of brushes, rejecting sticks and other débris. Their food probably consists of algæ and protozoa. There were no culex in this pool with the anopheles. In fact it is more strictly true with the larvæ than with the adults that anopheles and culex do not get along well together. The culex, being so prolific, soon kill out anopheles. This was seen time and again in the laboratory. Close by on the edge of a " dump " in some organic refuse, maggots were seen in countless numbers, the adult flies swarming about them. The ashes on this Southbridge street " dump," as is the case with at least four other large dumping grounds of Worcester, were graded on a level with the street. It would have been just as easy to have spread the ashes one quarter the depth, and over four times the area; that would have done away with the whole bog which now furnishes malaria to a section of the city called " the Island."

About six o'clock the bell-jar which had been pretty well shaken up riding over the cobble stones, drowning quite a number of larvæ, was seen to contain about fifty adult mosquitoes which had hatched out from the pupal stage. Whereas at five o'clock there had been about 75% larvæ and 25% pupæ, now there were about 25% larvæ and 75% pupæ. The pupæ are exceedingly active to escape fish which regard them as choice morsels of food. When the lecture began at eight o'clock, by placing an incandescent light back of the bell-jar, the audience was enabled to see at least 500 adult culex flying in the upper half of the jar and innumerable " wiggletails " in the water. In a separate bottle containing some of these " wrigglers " a few drops of kerosene or light fuel oil were added. A very thin film of oil spread over the surface, which the larvæ in vain tried to pierce with their breathing tubes. After sucking the oil into these tubes they wiggled violently to the bottom, turning on themselves hoop-like, trying desperately to suck the oil free from the tube. Several attempts of this kind generally resulted in death in a few minutes; sometimes, however, convulsive movements were seen even at the end of an hour.

Another experiment was shown of adding a minnow, a stickle-back and a goldfish to a bell-jar of water containing a large number of mosquito "wrigglers." It was laughable to see how greedily all the fish devoured these larvæ. Soon their little bellies stuck out quite perceptibly. After starving the adults in the original bell-jar for a week and losing a considerable number of them, a quarter of a banana hung to a string was dropped into the jar. In less than five minutes every available space on the banana was occupied by a ravenous mosquito, the proboscis deeply imbedded into the soft juicy pulp. Another instance, resembling the one of the bell-jar jolting over the cobble-stones, illustrates how nature makes an effort to propagate the species in time of danger by rapid changes from larval to pupal and from pupal to adult stages: in the dry weather of May the same puddle, where the original larvæ were obtained, began to dry up and the "wrigglers" were driven into a smaller and smaller space, until finally there was nothing left but a soft black ooze. It was at this period that the rapid change from stage to stage was seen in the hot sun — adults being born in large numbers. After four days in this mud the larvæ were passive and probably could not have survived much longer without food, when a welcomed shower came and again the puddle was formed and again the surface was seen covered with little rings, which represented the ends of the breathing tubes protruding for air.

Light fuel oil proportioned at the rate of one ounce to fifteen square feet of surface was spread on the water by means of a child's watering can, purchased at the ten-cent store. Returning in twenty-four hours, all the "wiggletails" were found dead in the mud at the bottom, while many adult females were caught while attempting to deposite their rafts, consisting of about four hundred eggs each.

In Peat meadow there is a drainage ditch about four feet deep and three feet wide. In some places the ditch is completely bridged over with grass, under which adults were very thick. The water is just the kind anopheles prefers, *i. e.*, slow-moving and clear. Culex, not being so particular, will breed in any kind of standing water except that having a scum over it, such as from algæ, duckweed, etc. In the little inlets or recesses in the banks, generally where there was sunshine, the anopheles larvæ were scooped off the surface with a dipper having a white enameled lining. This small ditch is one source of Beaver brook, the banks of which for two hundred to three hundred yards on either side are covered with cases of malaria for a distance of two or three miles.

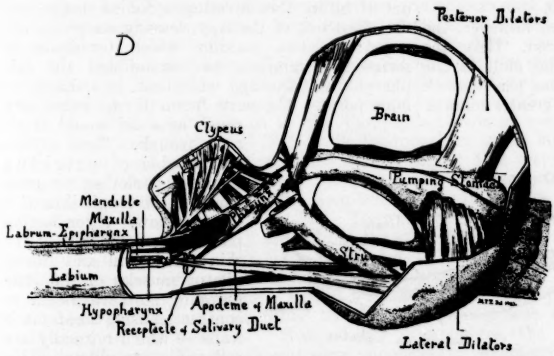


*Figure D is the head section simplified, showing the pump with its two posterior dilators attached to the dorsal plate and the five lateral dilators attached to the lateral plate; the complicated musculature which binds the anterior end of this pump to vertex, frons and the hollow struts which strengthen the head; the pharynx with its complicated musculature; and below, the muscles from base and head of the strut that retract the cutting lancet or maxilla, and the muscles from the head of the strut and the base of the labium which are attached to the posterior end of the apodeme of the maxilla and probably serve for protractors of this organ, *i. e.*, the maxilla.

It is very rare that anopheles larvæ are found in accidental receptacles, such as the tin cans on these "dumps" where culex breeds so profusely. They prefer natural bodies of water. Lake Quinsigamond was sterile of larvæ in the main body of water owing to the winds, waves, currents and fish. But anopheles larvæ were found in the "Sanctuary," a grassy stream leading back from the lake, where, after passing under the boulevard, it opens into a large grassy marsh. Just south of "The Sanctuary" are thick woods of tall trees, favorite camping grounds of the Worcester people. Owing to the protection from the wind the mosquitoes collect there in swarms. Many cases of malaria can be traced to these woods, the boys of St. John's Brigade being a striking example. In July three boys from Plantation street camped in tents there for two nights, and then went home because they could not sleep for the mosquitoes. Plantation street is situated on a hill, where neither anopheles nor malaria is to be found. In eleven days after returning home all three of the boys came down with periodic chills and fever, the second attack occurring exactly at an interval of forty-seven hours from the first. One of the boys had severe abdominal pain, finally becoming localized to the splenic region. Examination of fresh blood, and specimens stained with Ehrlich's and Wright's stains, showed the tertian parasite filling completely the red blood corpuscle, which was swollen and pale; actively motile, fine black granules of digested hemoglobin occupied the center of the

*Figures D and E are from the original laboratory drawings made and kindly furnished by Mr. M. T. Thompson, Clark University, Worcester. These will be published in more detail by him later.

plasmodium, which in the fresh specimen showed ameboid movement. At maturity each nucleus of pigment had gathered some protoplasm around itself until the amebula had subdivided into about twenty or thirty spores. With the rupture of the corpuscle simultaneously with the chill these young gametes were freed into the blood serum. Four hours before the next attack was due the plasmodia were seen to be segmenting again, so twenty grs. of quinine bisulphate were administered in capsule form. The attack which followed was lighter than the preceding one in each case, and proved to be the last paroxysm. However, another twenty grs. were administered four hours before the third attack was due, and after that prophylactic doses of two grs. three times a day were given for three weeks. This was combined with a tonic consisting of iron, arsenic and strychnia, in tablet form, as the hemoglobin averaged only 70% and the corpuscles in one case had diminished from 4,700,000 to 3,000,000.

Among the Italian authorities, however, the method of Sydenham is preferred. Here the quinine is administered after the chill in the sweating stage, because at this time the stomach is more retentive and there is a greater number

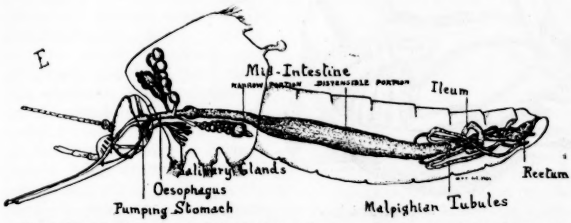


Figure E shows the general relations of the alimentary canal to the body; the pharynx and pumping-stomach followed by the esophagus with its three "air"-filled diverticula; the elongate digestive or mid-intestine whose distensible portion serves (in our species at least) to contain the ingested blood; then the five malpighian tubules, ileum and the rectum with the six conical "glands."

of young ameboid forms swimming free in the blood, in which form they cannot resist the disinfecting properties of the alkaloid, as the organism can when enclosed within a red blood corpuscle. Ferguson[1] recommends the bihydrobromate of quinine, 3 gr. hypodermically. He claims that it is non-irritating in solution, is ten times more effective than by mouth, and that six doses will cure. Italian observers have fully demonstrated that the only certain path of entrance of malarial infection is through the skin; that water taken through the stomach is not the vehicle; the epidemiological data prove it; a long series of experiments confirm it. Marshy water taken from intensely malarial places both in the summer and autumn, ingested in quantities up to three liters a day, failed to produce the disease in more than sixty persons experimented upon by various authors. It is of interest to study the exact method of this infection by the skin; and in this connection to study also the head and mouth parts of the mosquito in order to see in just what manner she punctures the skin, sucks the blood containing gametes, infects herself and finally gives subcutaneous injections of sporozoites or blasts to uninfected persons.

Mr. M. T. Thompson, one of the students in biology at Clark University, succeeded in getting a longitudinal section exactly through the median line of a culex stimulans, showing beautifully the musculature of the head. The slide was shown under the microscope at the June meeting of the Boston Society of Medical Sciences, to demonstrate the pumping stomach with its five lateral and two dorsal dilaters, the pharynx, the salivary duct, etc. Two excellent drawings of the mouth parts of culex (dissected) and anopheles (not dissected) were made from the microscope by another student — Mr. Roy Cushman. The biting apparatus is hidden within a sheath which terminates in an olivary body. In the act of biting this covering is folded down over the chest out of the way, leaving six pieces exposed: the two maxillæ which terminate in serrated extremities, two mandibles, the epipharynx and the lips, which end in a sharp oblique point. The parts fit on to each other very much as a lid would fit on to a trough. These stylets are capable of pricking through clothes or even through the tough skin of a horse or cow. After having pierced the capillaries of the skin the lateral and dorsal dilator muscles of the little pumping stomach begin to contract, causing the stomach walls — which normally are collapsed — to dilate. This creates a vacuum and the blood fills the stomach from the suction produced. In the ordinary tertian parasite, such as is seen in Worcester, the cycle in the human ends in about forty-eight hours with the liberated spores entering new red blood cells. Some, however, die and are assimilated by leucocytes. But should any of these free-swimming gametes be taken from the human body they undergo a further cycle of development — the sexual. A part grow larger in size, while others protrude long filamentous processes called flagella which separate from the parent body to fuse with the female or receptive forms. These flagellating forms were sometimes seen in fresh specimens of blood — after standing a half-hour under a 1-12th oil immersion lens — taken from cases which had newly entered the Worcester City Hospital. Ordinarily the process of development stops here. But if this union of the sexes takes place in the anopheles' stomach the fertilized females work through the mucous, inner muscular and outer muscular coating of the stomach, entering the esophageal diverticulum. As they enlarge, short dark lines quickly sur-

[1] Progressive Med., December, 1902.

round clear spaces on the surfaces. The clear spaces are known as centremeres, and the lines as blasts. The latter, which are really spindle-shaped cells, enlarge until they burst the mother cell (Zygotes), and being very motile soon find themselves free in the connective tissue supporting the salivary glands. From here it is an easy matter for those so-called sporozoites to reach the tubules of the salivary glands and become inoculated with the saliva in the act of biting. They then enter the red blood corpuscles and thus the original cycle in the human is started all over again. Since the Italians demonstrated this complete biological victory four years ago, it has been verified by scientific observers the world over. But not satisfied with the life history of the parasite alone, practical demonstrations were made. One hundred and four persons in a thickly malarious region were carefully protected at night from the bites of anopheles by screens and mosquito bars, and although practically everybody around them developed malaria, they themselves were free from it the whole season.

Drs. Cambon and Low, of the London School of Tropical Medicine, lived during the whole summer of 1900 next to an old canal in one of the worst malarial swamps in the Campagna. The doors and windows of their little five-room house were most carefully protected by screens, and they were always indoors before sunset, from where they could see the anopheles collecting on the wire screens outside. They were exposed to the mist which arose from the stagnant water at night, but were unaffected by malaria even during the wet season when all the peasants were suffering. Beside these two, a check experiment is described by Dr. L. O. Howard in his book on "Mosquitoes." The Italian authority Bastianelli sent some anopheles mosquitoes which had been fed on the blood of a patient suffering from malaria in Rome, to Dr. Patrick Manson in London. Dr. Manson's son, who had not been in a malarious country since a child, allowed himself to be bitten and in due time came down with double tertian malaria, microscopical examination demonstrating the parasites in the blood. It was Dr. Manson who, twenty years ago, after proving that the parasitic worms, filaria, could be demonstrated at night in the blood of persons suffering from elephantiasis, had the happy thought that as mosquitoes were nocturnal in their habits they might be concerned in the transmission of this dreaded disease. To-day we are positive that the embryos of these filaria Bancroftii are inoculated into man by the beaks of a species of culex, commonly seen around the houses in Australia.

And now comes under the date of Aug. 15, 1903, a command — from Brig.-Gen. Grant of the War department, at the Headquarters Department of Texas, at San Antonio — to screen all barracks, manholes, ventilator openings, barrels, etc., containing standing water, to prevent the spread of yellow fever from Mexico into the United States by means of the Stegomyia or brindle mosquito. The police officers of each port are to be held personally responsible for the proper drainage, filling or protection by oiling of all accumulation of water outside of premises, for the removal of all possible receptacles, such as old cans, crockery, etc., and for the proper condition of surface drainage. The command concludes with, "Two mosquito-proof rooms with wire gauze ceiling, seven feet from the floor, should be prepared at or near the hospital, the one for the reception of suspicious cases, and the other for the treatment of yellow fever cases."

In 1895 the unsanitary condition of Havana, Cuba, was appalling. Water from the houses was allowed to flow out into the streets and settle there. Mosquitoes bred freely. During the year there were 551 cases of yellow fever in the city. In 1896 with the arrival of crowds of non-immune immigrants from the United States and elsewhere the number of cases shot up to 1,278. In 1897 there were 828 cases. But in 1898 when the sanitary laws became more rigid, the streets were cleaned up, better drainage established, etc., the number dropped to 138, and to 102 in 1899. In 1900 the arrival of hundreds of non-immunes again brought the number up to 406. It was in the summer and fall of that year that the conclusive experiments were carried on in and around Havana to demonstrate that the Stegomyia mosquito was the carrier of yellow fever, although it was not then known that the disease itself was caused by a protozoön.

Following the methods now about to be used in Texas, of destroying the breeding places of mosquitoes and of screening the hospitals and houses, the number of cases dropped in 1901 to seventeen. Since that time there have been only five cases in Havana. In spite of all this evidence of satisfactory mosquito extermination, Worcester still remains inactive, although interested, as is shown by the fact that fifteen different clubs listened to lectures on the subject last winter. All of the daily papers contained articles — one covering three pages.

An editorial in the *Evening Gazette* severely criticised the Common Council for recommending a loan of $25,000 to be expended in improving the filtration beds and refusing to donate the $1,200 which the Board of Health, at the suggestion of the Worcester District Medical Society, recommended to fight mosquitoes and malaria. The mayor, while admitting the necessity of combating malaria, considered that the tuberculosis hospital was more important in spite of the great expense attached to it. Consequently, anopheles flourishes, not through the mayor's friendship (as is the case with the Common Council) but through his indifference. The writer on a visit south this summer found the laity of New Orleans actually opposing measures for mosquito extermination — about to be taken by the board of health backed by the medical profession — on the grounds that

the mosquito was put there for a purpose which was known to the Lord (and he alone); that they probably destroyed certain impurities in the air and ought to be befriended. Considering the system of shallow cisterns in New Orleans, they will get all the chances to befriend they wish. It remains to be seen what will be the attitude of the Worcester city authorities as the scourge of malaria increases and as the evidence of successful mosquito extermination accumulates elsewhere as it has at Brookline under Dr. H. Lincoln Chase and Dr. J. Albert C. Nyhen. The conditions are certainly most deplorable in Worcester at present (September, 1903).

We've fought our way up from the Gulf
By that loud-ringing blade "Quin. Sulph.,"
And now are we to sit here dumb,
And let Anopheles "go hum"?
No! Fight him with Petroleum!
Purveyor of Plasmodium,
Anopheles Mosquito.

Envoi.

To me will come an awful ease
When thou art gone, Anopheles!
My Plasm freed from Odium,
When thou art dead, Plasmodium!

Medical Progress.

PROGRESS IN PATHOLOGY.

BY JOSEPH H. PRATT, M.D., BOSTON.

(Concluded from No. 25, p. 682.)

LEUKEMIA REGARDED AS A TUMOR FORMATION.

LEUKEMIA, according to Weber,[14] is the result of a neoplastic activity of the leucocyte-producing organs in which the tumor cells gain entrance into the blood stream. Hence the disease, according to this theory, should be grouped with the new growths. If the less differentiated cells of the type of the large lymphocyte are drawn from the lymph-nodes or from the bone marrow lymphatic leukemia is the result. In the acute cases the blood usually contains more of the large than of the small lymphocytes. If the more differentiated cells, that is, the granular cells of the bone marrow, are concerned chiefly in the tumor formation, the pathological picture of myelogeneous leukemia is produced. According to this theory lymphatic leukemia is a tumor arising from the proliferation of a more embryonic cell-type than myelogenous leukemia, and this agrees with the fact that in its development and course lymphatic leukemia is generally more rapid. Leucocytosis or lymphocytosis is simply the expression of a tissue reaction while leukemia is always due to the emigration of tumor cells from a hyperplastic neoplasm in the leucocyte producing tissues. If the organism attempts the rapid formation of myelocytes there may not be sufficient time for the development of granules in the cell protoplasm, and as a result unripe cells are thrown into the circulation. These unripe cells resemble the large and small lymphocytes and not the typical myelocytes. The writer holds that cells of the myelocytic type, found in the spleen and lymph nodes in cases of myelogenous leukemia, may be formed *in situ* out of the undifferentiated large lymphocyte.

Weber[14] reports a case of acute leukemia of two months' duration, in which the blood picture was that of a mixed cell leukemia (Reed's terminology). In a spread of the heart's blood 93% of the white cells were lymphocytes and 6% myelocytes. The liver, spleen and lymph nodes were enlarged. Great numbers both of lymphoid cells and eosinophilic myelocytes were found in the internal organs. Professor Muir of Glasgow, who examined the sections, regarded the case as one of lymphatic leukemia, although he had never seen such numbers of eosinophiles in that disease.

The theory advanced by Weber is not wholly new. Türk[15] was the first to regard lymphatic leukemia as belonging in the neoplastic series.

A FERMENT IN THE BLOOD IN MYELOGENOUS LEUKEMIA.

Brandenburg[16] in 1900 called attention to the fact that the blood in myelogenous leukemia without the addition of $H_2 O_2$ or turpentine oil would color guaiac tincture blue. This held true even when very small amounts of blood were used. Bone marrow from a case of myelogenous leukemia gave the reaction, but the structures rich in lymphocytes, as the spleen, thymus and lymph nodes, as well as the other organs of the same individual, yielded negative results.

Meyer[17] found the reaction did not occur when the blood and bone marrow from a case of lymphatic leukemia were tested. He confirmed Brandenburg's results in two cases of myelogenous leukemia and modified the technique. The following simple method of applying the test is recommended: Two or three drops of leukemic blood are collected in a test-tube and mixed with a large amount of water, so much, in fact, that no color of blood remains. The fluid becomes a deep blood on the addition of guaiac tincture.

Under Prof. Friedrich Müller's direction a study of this property of myelocytic blood was made. The reaction was found to depend upon an oxidizing ferment present in the myelocytes. The same ferment was demonstrable in pus cells and in the completely normal neutrophilic leucocytes, but not in the lymphocytes.

The author believes that the conception of an acute lymphatic leukemia as a distinct variety of the disease is correct, and that it should be sharply differentiated from the myelogenous form.

Rosin and Bibergeil have shown that the nucleus of dead leucocytes is colored by neutral red, while the nucleus of living leucocytes is not. The cytoplasm of both living and dead leucocytes takes this stain.

[14] Virchow's Archiv, 1903, clxxiv, p. 324.

[15] Berl. klin. Woch., 1901, xxxviii, p. 965.
[16] Münch. med. Woch., 1900, xlvii, p. 183.
[17] Loc. cit., 1903, I, p. 1489.

Meyer found in a case of leukemia that a relatively large number of nuclei were stained at the time when the excretion of uric acid was greatest. Hence he concludes that the destruction of leucocytes can be estimated not only by the uric acid output, as is well known, but by the number of leucocytes in a blood smear taking the nuclear stain with neutral red.

ACUTE MYELOGENOUS LEUKEMIA.

Until recently all cases of acute leukemia were regarded as belonging to the lymphatic type of the disease. Frænkel, who made a careful study of the literature up to 1895, did not admit the existence of an acute myelogenous leukemia. Pinkus, in his article in Nothnagel's "System," published in 1901, was not able to record a single case. Billings and Capps [18] give the details of an undoubted case of acute myelogenous leukemia observed by them and the analysis of seven cases collected from the literature. The duration of the disease in their case was two months. The number of leucocytes varied from 540,000 to 374,000 per cm. When first examined the blood showed 30% of myelocytes and 39% of large mononuclears. Later the percentage of myelocytes increased to 54.

The onset in most of the recorded cases was sudden. Four cases had an inflammation of the throat, and necrosis of the jaw or palate occurred in three instances. The lymph nodes were usually somewhat swollen, and the spleen was always palpable, although in only two instances greatly enlarged. The anemia in every case was severe and progressive. The number of leucocytes ranged from 16,000 to 540,000. The average count was much lower than usually found in the chronic myelogenous leukemia. There was difficulty in separating the mononuclears and the myelocytes, due to the fact that many transitional cells with faint indistinct granules occurred. The myeloid cell has usually an eccentrically placed nucleus, which is often oval and the protoplasm is frequently faintly granular.

When the large mononuclears are associated with a considerable number of myelocytes of the same size, and when many of the mononuclears show indistinct granules, the writers believe it is safe to regard them as myeloid cells.

In the recorded cases of acute myelogenous leukemia the large mononuclear never formed less than 15% of the leucocytes in the blood, while the myelocytes varied from 8 to 60%. Eosinophiles, mast cells and nucleated red corpuscles were present in varying number in some cases and absent in others.

Billings and Capps do not refer to the striking case of acute myelogenous leukemia observed by Kraus.[19] The patient was a woman of the age of twenty-seven. The onset was sudden, and apparently the entire course of the disease embraced only seven days. There was fever, and hemorrhages occurred into the gums, skin and uterus. The blood contained 40% of hemoglobin. The myelocyte was the predominating cellular element. There were almost no lymphocytes and no normoblasts. Türk [20] demonstrated last spring at a meeting of the Vienna Society of Internal Medicine the anatomical and microscopical preparations from a case of acute myelogenous leukemia. The clinical picture was that of pernicious anemia, and the blood findings were remarkable. The anemia was profound. There were 1,060,000 erythrocytes and 19% of hemoglobin. The marked alterations of the red blood corpuscles which occur in pernicious anemia were absent. No erythroblasts were seen. The leucocytes numbered 42,200, and of these 47% were myelocytes, 32% polynuclear leucocytes and 14% lymphocytes. Eosinophiles were rare and no mast cells were found.

At section the bone marrow of the vertebræ, ribs and sternum and the proximal parts of both femora was homogeneous and of a grass green color. Microscopically, the marrow was composed almost exclusively of neutrophilic myelocytes.

TOXEMIA IN ACUTE LEUKEMIA.

Hayem and Bensaude [21] have shown that the toxemia of purpura hemorrhagica resembles that produced by injecting into the blood-stream of one animal the blood or serum of another species. In the list of maladies of this type they include, in addition to purpura hemorrhagica, pernicious anemia, variola hemorrhagica and acute hemorrhagic leukemia.

They report a case of acute hemorrhagic leukemia with the blood picture of lymphatic leukemia in which the spleen, liver and lymph-nodes were not enlarged. The duration was three months. At the close there was severe hematuria, associated with cutaneous and visceral hemorrhages, epistaxis, and metrorrhagia.

CHANGE IN TYPE FROM MYELOGENOUS TO LYMPHATIC LEUKEMIA.

Wilkinson [22] reports a case of chronic leukemia with great enlargement of the spleen and complete absence of lymphatic envolvement. A blood examination toward the close of life showed myclocytes and lymphocytes in about equal number. The white count was 560,000 per cm. During the week following this first examination the blood picture changed to that of a typical lymphemia, though an occasional myclocyte was present.

Klein [24] has observed 41 cases of leukemia during the past twelve years; 23 of these were of the lymphatic type and 7 ran an acute course. In one of the acute cases, in which 99% of the 360,000 leucocytes per cm. were lymphocytes, not a single enlarged lymph-node was found during life or at autopsy, and the spleen was barely palpable. Acute cases with only slight enlargement of the lymph nodes were not rare. In

[18] Am. Journ. of the Med. Sci., 1903, cxxvi, p. 375.
[19] Die Erkrankungen der Mundhöhle und der Speiseröhre, Vienna, 1902, p. 291.
[20] Zeit. für. inn. Med., 1903, xxiv, p. 336.
[21] La Med. Moderne, 1903, xiv, p. 56.
[22] Lancet, 1903, i, p. 1739.
[24] Cent. fur. inn. Med., 1903, xxiv, p. 817.

these cases three symptoms are of diagnostic importance: — the alterations of the buccal mucous membranes, the hemorrhagic tendency and the anemia. Without a blood examination some cases of acute lymphatic leukemia could not be distinguished from scorbutus or others from Werlhof's disease.

Klein maintains that in the diagnosis of lymphatic leukemia the increased percentage of lymphocytes rather than the total number of leucocytes is the essential thing. In one of his cases the leucocyte count ranged from 5,800 to 75,000. The percentage of lymphocytes was 54.8 when the total number of leucocytes per cm. was as low as 7,400.

ERRORS IN DIAGNOSIS OF ACUTE LEUKEMIA.

Melland [23] truly observes that in the acute form of leukemia "there is frequently nothing either in the size of the spleen or the lymph nodes to suggest the true nature of the disease or the advisability of estimating the numbers of leucocytes, and so, in the absence of a routine blood examination in all cases of severe anemia, a diagnosis of pernicious anemia, of purpura hemorrhagica, of scurvy, or even of severe chlorosis may be made. Indeed, in the thirty-two years from 1857, when Friedreich described his first case, to 1889, Ebstein was only able to collect 17 cases in the medical literature, whilst in the last ten years, during which systematic blood examination has become the rule, some 40-odd cases have been added to the list." Melland reports a case in which the anemia was intense and hemorrhages frequent. No enlargement of the spleen or lymph-nodes occurred and the post-mortem findings were almost negative. Smears of the bone-marrow showed a lymphoid degeneration; both large and small lymphocytes were present, but the former largely predominated.

THE ORIGIN OF LYMPHOMA.

Glénski [25] studied a case of lymphatic leukemia in which there were multiple lymphomata on the meninges and ribs and a leukemic infiltration of the tissues of the orbit causing exophthalmos. The author believes that the so-called heteroplastic lymphoma may arise *in loco* from pre-existing lymphoid tissue or may be due to the proliferation of lymphocytes which have left the blood stream. He states he has often seen lymphocytes in the various coats of the vessel wall from the sub-endothelial layer to the adventitia. These lymphocytes pass from the blood through the vessel wall to the surrounding tissue, where they multiply and give rise to lymphoma. Glénski does not believe the lymphocytes have an independent movement.

TRAUMA A CAUSE OF LEUKEMIA.

Reckzeh [26] reports interesting observations on a series of leukemic cases which occurred in Kraus's Berlin clinic. He thinks that injuries are important predisposing factors in the causation of the disease. As men are more exposed to trauma than women, it is not surprising that leukemia is more frequent among men. All his patients were males. This theory of the causal relation of trauma to leukemia is supported by several of the cases studied.

Shortness of breath was frequently noted. This may be the result of some complication such as pneumonia or pleurisy, but is usually due to pressure from the enlargement of the thoracic lymph-nodes. In three cases there was much pain in the sternum. In every case the blood showed a definite poikilocytosis. Granular degeneration of the erythrocytes was observed in only one instance. The blood-plates were frequently very numerous. The author accepts the view of Pappenheim and others that every leukemia is of myelogenous origin and divides the cases into the mixed-cell and lymphoid varieties. Experiments undertaken to throw light on the active movements of the lymphocytes yielded negative results.

One case presented the clinical features of pernicious anemia as well as of leukemia. Similar instances have been reported by Strauss, Grawitz and others. There was marked poikilocytosis and polychromatophilia and extensive granular degeneration. Numerous microcytes and megalocytes occurred. Megaloblasts were present in great number. The number of erythrocytes ranged from 1,850,000 to 3,750,000 and the hemoglobin from 40 to 55%. The leucocyte count varied from 302,000 to 102,000. Myelocytes formed from 5 to 27% of the white cells. Toward the close the eosinophiles vanished from the blood. Reckzeh regards the pernicious anemia as secondary and due to profuse hemorrhages which occurred during the course of the leukemia.

LYMPHATIC LEUKEMIA WITHOUT MACROSCOPIC ALTERATIONS OF THE BONE MARROW.

In the brief allusion to Dennig's case on page 681, an unfortunate typographic error makes 'macroscopic" read "microscopic." There were no gross morbid changes of this case, but a smear from the bone marrow showed a decided increase of lymphocytes. In all the other recorded cases visible alterations in the bone marrow have been present. The author states that Walz, who performed the autopsy and who is well known through his studies of leukemia, will make the histological report.

[23] Med. Chron., 1902, xxxvi, p. 372.
[25] Virchow's Archiv., 1903, clxxi, p. 101.
[26] Zeit. f. klin. Med., 1903, l, p. 34.

FIRST AID BY RAILWAY EMPLOYEES.

THE trainmen of the Chicago and Eastern Illinois road are to be given a course of instruction regarding the best method of giving aid to the injured in case of railway wrecks. The plan is to establish schools in the various division headquarters and require the trainmen to attend the lectures and demonstrations which will be given on the subject. — *Med. Record.*

Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twentieth Annual Meeting, Held at Washington, D. C., May 12–14, 1903.

(Concluded from No. 25, p. 685.)

Dr. R. A. Cleemann of Philadelphia described

A CABIN FOR OPEN-AIR TREATMENT.

Plans were shown of a cabin, the sides of which let down and afford free circulation of air. The cabin rests on posts which form the four corners and rise to eleven feet in height. Horizontal beams extend between these posts at a distance of two feet above the ground, and on these the floor of the cabin is laid. The walls of the cabin, made of ⅛-inch planking, are eight feet high; three of the walls are hinged along their lower edge so that they may open outwardly and downward. Posts are placed at a suitable distance outside the cabin to prevent their descent below the plane of the floor. When the sides are drawn up they fit snugly into grooves or rabbiting. The walls are let down and raised by pulleys attached to the upper beams. These movable walls are the important feature.

Dr. W. C. Glasgow of St. Louis read a paper entitled

SOME EXPERIMENTS IN THE TREATMENT OF PULMONARY AND LARYNGEAL TUBERCULOSIS BY MEANS OF THE ELECTRIC LIGHT.

The treatment gave satisfactory results.

Dr. Rochester of Buffalo stated that he had been experimenting for the last two years on the consumptives of the Erie County Hospital, using the actinic rays, and that he had obtained absolutely no beneficial results thereby.

Dr. Thomas D. Coleman of Augusta, Ga., read a paper on the

SUSCEPTIBILITY OF THE NEGRO TO TUBERCULOSIS.

It was shown that the present condition of the negro has been growing worse since he has been left to his own devices. The natural susceptibility to tuberculosis in the colored race is accentuated by bad environment, bad habits, improper food and poor clothing. There is a racial predisposition to the disease. Evidence was adduced to show that the negro was comparatively healthy in slavery times. Now the death-rate from tuberculosis is about twice as great in the colored as in the white race, as shown by statistics from Charleston, S. C., Atlanta and Augusta, Ga., and New Orleans, La. Since the abolition of slavery the negro has left the plantations in large numbers and has sought the cities. Dr. Coleman suggested the usual remedies, viz., moral education, fresh air and disinfection. In Augusta the ratio of deaths from tuberculosis to total mortality for the last five years has been for whites 1 in 11.36; for colored 1 in 6.11; in other words, though the colored population is from 10 to 16% less than the white, in five years tuberculosis caused the death of 147 white persons and 448 colored. In round numbers, allowing for the discrepancy in population, about twice as many colored people die annually from tuberculosis as in the white race. In Atlanta the ratio is 1 to 10.90 for whites and 1 to 8.12 for colored; in New Orleans, 1 in 8.95 white, and 1 in 6.64 colored.

DISCUSSION.

Dr. Sanger Brown thought that much of the discussion that we see in the press, societies and elsewhere relative to tuberculosis misses the main point — the importance of pure air and proper ventilation. In the British Army we know that barracks were maintained throughout the civilized world in every climate, and before the subject of ventilation was properly presented in relation to tuberculosis we know that the death-rate was something frightful from tuberculosis, and when those same men, under the same conditions, same food, habits, etc., were given large barracks and the ventilation was looked to the disease almost disappeared from among them, and yet here we go on talking about spitting on the floor and the influence of civilization and a great many other things, losing sight of those demonstrations.

Dr. Edward R. Baldwin. I am convinced that such a racial weakness exists, and I think that this is amply illustrated by the susceptibility shown by various races toward certain of the infectious diseases. Racial susceptibility is still a recognized factor, and I agree fully with Dr. Coleman in this particular.

Dr. Thomas J. Mays. About four or five years ago I undertook to investigate the relation between consumption and insanity in the negro. I communicated with eminent medical men in the South, and was informed that, for example, in the state of Georgia, there were before the Civil War or before the emancipation of the negro, about forty insane negroes, and that pulmonary tuberculosis was practically unknown in that state. The same testimony came from North Carolina and also from Mississippi and Virginia, namely, that tuberculosis was practically unknown in these states. The results of my investigation led me to believe that insanity comes first amongst the negroes, then probably syphilis, or possibly syphilis precedes insanity and then comes tuberculosis.

Dr. Beverley Robinson of New York opened the discussion on

THE COMMUNITY AND TUBERCULOSIS.

After discussing the uses of sanatoria for the well-to-do and the poor, Dr. Robinson spoke of home treatment, which, for the vast number, is the only available treatment. The day of specifics is passing. Hygiene in its broadest and best sense is, after all, our main reliance. Statistics based on other means, no matter how favorably interpreted by their warm advocates,

meet with little response from those who have learned by long experience to become properly skeptical. We are looking forward to the bright day when, perhaps, a really efficacious anti-tubercle serum shall be discovered or, better still, an immunizing serum. Dr. Trudeau's work in this line was referred to, and encouraged us to believe that the day is not far distant. Dr. Robinson referred with gratification to the excellent results of Dr. John F. Russell of New York, reached by improving the resistance of the patient by administering fats in assimilable form.

Dr. Robinson hoped that while seeking to improve or abolish the nests of disease we will not lose sight of the broadest humanity for the sufferer. Don't make him a social outcast! Don't add to his misery. Tuberculosis is not contagious in the ordinary sense of this word and in the same way as the eruptive fevers, for example, are contagious, through a third person or through the air of the patient's room. One may be as safe in the room of a phthisical patient as anywhere else, provided, of course, every rational and important precaution and observance be upheld to prevent infection. The disease is infectious and communicable, but not contagious. Dr. Robinson noted the growing repugnance found at summer resorts to tuberculous persons. But in an experience of thirteen years in the Out-door Department of the New York Hospital where patients coughed, expectorated and where frequently tuberculous sputa reached the floor, dried up and were later wafted freely to the respiratory tract of all present, no case of consequent infection was noted. Dr. Robinson advocated tent life and took, in general, a broad humanitarian and rational view of the whole subject.

DR. FREDERICK I. KNIGHT. While sanatorium physicians are perhaps the proper ones with their statistics to defend the sanatorium treatment, there is no doubt but that tuberculous patients may recover under all conditions whether treated or not treated; many of them have recovered in my practice under the most disadvantageous circumstances, with no proper hygiene or care of any kind. Of course, those cases are comparatively few. Others have recovered under old-fashioned treatment, but I do not hesitate to say that far more, very many more, have recovered under the proper modern treatment, which we call sanatorium treatment. It isn't necessary for a person to be in a public institution, but it is very important for him to be away from home, if possible, particularly if he lives in a rigorous climate. He can be away from home, for instance, in a private house at Asheville or at Saranac lake and be treated practically on the sanatorium plan; but he must be away from home, and I have always advised a patient even if living in a good climate to go out of his own home if he wished to be treated to the best possible advantage. That is very much more true, though, in the case of a rigorous climate. It is impossible in New England to make a patient live on the piazza, to live out of doors all day long as they do in the Adirondacks for instance. He will do it there because everybody else does it. But it is different in New England; it necessitates his being alone all day long, and he won't do it; he runs into the furnace or stove or whatever it may be, because the rest of his family is there. So I say that the home treatment cannot be carried out as satisfactorily in a cold climate. Now, in regard to tents. I never saw a tent that was comfortable in summer; it is too hot with the heat of the sun, and in the winter the air must be foul. I don't see how we can well heat and ventilate a tent in cold weather so that the patient has pure air.

DR. E. O. OTIS. Dr. Robinson seems to disparage, I might say, the private sanatorium for paying patients. There are two points I think that it is well to bear in mind in this connection with regard to private sanatorium. Dr. Knight has just referred to one; that is, the control of the patient. You may have a patient who could command any amount of money who lives in the country, who can turn his whole house into a special sanatorium, and still you may not be able to control that patient, which is one of the most important points in the sanatorium treatment. I had an experience of that sort this very last year: the patient was wealthy, the house was in the country, it was on a hill, had verandas on all sides, and every condition so far as material resources were concerned for good treatment, but the husband of the lady declared that she could never be properly controlled under those circumstances, and she was consequently sent to a paying sanatorium where she is recovering. The second point I desire to make is this: the educative influences of the sanatorium treatment. We know that in Massachusetts we are experiencing the great value of the teachings of the cured patients, the graduates of Rutland, upon the community. Is it not as important that these paying patients should give us that influence upon the class of people with which they are brought in contact? It is a very valuable and important matter to be kept in mind. One thing further. Dr. Robinson has referred to the cruel and inhumane treatment accorded in many cases by the unreasoning fear of others in regard to this disease. I think that the profession itself is largely to blame for this. I do not know of any other one thing that has done more perhaps to create that undue fear than the signs which we put up in all of our street cars and at our stations and many other places, against spitting. That is all right, but it seems to me at least inconsistent to have a large sign with regard to spitting on our street cars and not to pay any attention to the matter of pure air and ventilation.

DR. THOMAS J. MAYS of Philadelphia read a paper on the

DEATH RATE OF ACUTE PNEUMONIA.

He noted its increasing prevalence and its rank

as the most frequent cause of death in the great cities in the United States, outranking pulmonary tuberculosis in nearly every instance. While statistics are more or less incorrect, still he believes that on the whole they are in respect to mortality reasonably accurate and useful. Dr. Mays' presented charts covering a period of twenty-five years, showing the mortality from acute pneumonia in fourteen of the cities in the United States, including Rhode Island and New Jersey and representing a total of over eleven million inhabitants. The lines showed the deaths from pneumonia, pulmonary tuberculosis and heart disease and the gradual ascendancy of the pneumonia curve. In Chicago the greatest increase in the mortality from pneumonia was observed, amounting in forty-two years to over 350%. The deaths from heart disease increased 450% in the same period. Dr. Mays said there is no good reason for believing that pneumonia has gradually sprung into such prominence as to cause present or future alarm, for its highest death rate occurred before 1896, and since that time it has declined 21.17%. The conclusion is that deaths from pneumonia are decreasing; that deaths from disease of the heart are increasing and that deaths from phthisis decreased until five years ago, but have markedly increased since that time.

Dr. Thomas D. Coleman of Augusta, Ga., read a paper entitled

SOME COMPLICATIONS OF PNEUMONIA, WITH REPORT OF CASES.

Dr. Coleman assumed that the mortality of pneumonia was about 21.8%, taking the world over and taking statistics as they are presented. The most common complication is pleurisy, so common that it may almost be considered a part of the disease, for it occurs in all cases where pneumonic consolidation reaches the surface of the lung. Endocarditis and pericarditis and gangrene of the lungs are formidable complications.

Dr. Glentworth R. Butler of Brooklyn read a paper on the

TREATMENT OF LOBAR PNEUMONIA.

Dr. Butler noted the absence of any specific treatment of the disease, but looks for it in the discovery of an antitoxin which will counteract the toxemia of the disease. The possibility that the disease is not a bacteriological unity and that it may be caused by other pathogenic organisms than the pneumococcus of Fraenkel would indicate the necessity in this case of suitable mixed antitoxins.

DISCUSSION.

Dr. Judson Daland, Philadelphia: I am of the opinion that the high mortalities quoted for pneumonia are from hospital and not private practice. There is one simple point in regard to pneumonia and that is that frequently in severe cases death occurs through the heart as mentioned by Dr. Rochester.

Dr. Egbert Lefevre, New York: In regard to the treatment of the so-called cardiac failure, I have made some study of cases of pneumonia brought to the hospital and also in private practice in relation to the blood pressure in these cases and the question of drugs used to control the same. I find that these cases may be divided into two great classes, namely, those in which we have a true failure of the heart where the heart muscle weakens, and those cases where the apparent failure of the heart is in reality due to vasomotor paralysis and dilatation of the blood vessels. This collapse in the general vascular system is probably caused by the direct action of the toxins on the vasomotor center. The intravascular blood pressure shows this very distinctly when taken by the Gaertner or Riva-Rocci instruments. The vessels are widely dilated, and as a result we have a rapid and irregular heart and a loss of tension in the whole arterial system. The first sound of the heart loses its distinct character and becomes very similar to the second sound. These cases react quickly to drugs that act upon the medullary centers. In the other class where the heart itself is primarily affected, I find that stimulants which act directly upon the heart produce the best results, such as the digitalis group, for instance, or preferably strophanthus. In regard to the other cardiac stimulants, I have largely discarded the alcoholic and substituted therefor the liquor ammonii acetatis.

Dr. H. L. Elsner, Syracuse, N. Y.: It is a well-known fact that the pneumococcus toxin paralyzes the spinal centers, and that a vasomotor paralysis results. In cases in which nitroglycerine and the nitrites have been indiscriminately used much harm results. If the resistance of the peripheral blood vessels is far removed you add insult to injury, and I believe there is an enormous amount of extra work thus thrown upon the right heart. There are cases of arterial sclerosis in elderly people with pneumonia with tense arteries, where the arterial wall offers monstrous resistance to the heart with extremely high arterial tension, where I believe nitroglycerine does much good. But these are exceptional cases. The truth of the matter is that the indication which we must always keep in mind is toward stimulating the right heart. One remedy not mentioned here to-day is spartein, which I believe to be one of the best remedies for this purpose, not in small but in large doses of, say, 1 or 2,gr. administered every two or three hours. Then, too, adrenalin or suprarenal extract is useful. Those of us who have recently used the sphygmomanometer to test blood pressure I believe can bear testimony to the efficiency of adrenalin and suprarenal extract in this condition. I believe that we have in suprarenal extract and its adrenalin the very best heart tonic which we can use, and I believe that all of these cases ought to be given suprarenal extract or adrenalin from the beginning as a food and not a medicine. Pneumonia justifies polypharmacy, and persistent effort on the part

of the doctor and nurse at every moment in the illness of these patients will often bring its reward in the unexpected and brilliant results.

DR. E. FLETCHER INGALLS of Chicago presented a paper on

THIOCOL IN THE TREATMENT OF CROUPOUS PNEUMONIA.

He showed that thiocol may be given to pneumonia patients in large doses without disturbance of the digestive tract and without apparent harm. In no case did he observe that it affected the temperature, pulse, respiration or physical signs because in these cases where these factors indicated improvement the natural course of the disease would have been expected to cause a similar change. Dr. Ingalls suggests 5 gr. as an initial dose, rapidly increasing to 30 gr.

DR. G. R. BUTLER, Brooklyn, N. Y.: I have perhaps seemed to insist a little too strongly on the importance of treatment in pneumonia, but it was written while still under the impression got from certain consultation cases. The physicians in attendance were therapeutic nihilists, and to my mind their patients were being left to drift to death without a finger lifted to prevent. Under proper therapeutic treatment recovery took place, and it was while laboring under a very vivid recollection of these cases that I wrote the paper.

DR. S. E. SOLLY of Colorado Springs reported a case of

TUBERCULOUS BRONCHIECTASIS.

The patient was a woman aged forty-eight, who had a tendency to colds and came to Colorado from western New York in July, 1902. She had fever, loss of weight, rapid pulse and a scanty, watery sputum containing staphylococci and streptococci, but no tubercle bacilli. There was a small area of consolidation of the right middle lobe. There was a leucocytosis of 13,800. Tubercle bacilli appeared in the sputum in rather large numbers. The expectoration was fetid and reached sixteen ounces in twenty-four hours. As the sputum became scanty the temperature rose; as it discharged the temperature fell. At no time was there evidence of a cavity. Skiagraphs showed what appeared to be a dilated bronchus. Recovery seems to be assured at the time of the report.

Dr. Solly said that tuberculosis may occur as a complication of bronchiectasis, but that practically bronchiectasis of large areas never arises as a complication of tuberculosis. Nevertheless it is admitted that small bronchiectacic areas, without special clinical importance, are not infrequent, also that large areas sometimes occur in the tuberculous in cases in which there have been circumscribed processes in the apices, or a tendency to recovery by subsequent fibrosis, and only under such circumstances.

DR. RICHARD C. NEWTON of Montclair, N. J., read a paper on

DEEP BREATHING.

Dr. Newton advocated deep breathing so that, by the increase of respiratory capacity, the action of the heart and blood vessels will be strengthened and the oxygenation of the blood will be increased, with the result that all the tissues will be better nourished, metabolism will be better carried on and secretion and elimination will be more perfectly accomplished. Every bodily function will be better performed and the improvement will be more manifest than in digestion and the assimilation of food. Few people breathe properly and they know very little of this important physiologic process. Textbooks have little to say on this point. The abnormal respiratory conditions in obese subjects, for instance, should be studied. Indolent and shallow breathing causes suboxidation with resulting obesity, and obesity is a prominent cause of dyspnea on exertion. Children should be taught deep breathing early and it should have a place in the physical exercises of all schools. Dr. Newton quoted Dr. Edward Hitchcock, who has said that "There is no doubt that if as much care were bestowed on our young in seeing that this particular part (the thorax) was developed with that care that the brain receives, tuberculosis would almost disappear."

DR. D. H. BENGEY of the Laboratory of Hygiene, University of Pennsylvania, presented a paper entitled

NEGLECTED PROPHYLACTIC MEASURES AGAINST DISEASES OF THE RESPIRATORY TRACT.

The paper showed the bad effects of dust, especially in cities where electric cars and smooth pavement are found. He advocates greater efforts to flush and cleanse the streets. Defective ventilation in the schools is another cause of respiratory affections. Neglect of proper ventilation is a cause of untold suffering.

DR. C. L. MINOR of Asheville, N. C., read a paper on

THE CYRTOMETER, A NEGLECTED INSTRUMENT OF PULMONARY DIAGNOSIS AND PROGNOSIS.

The following officers were elected: President, JAMES C. WILSON, M.D., of Philadelphia; Vice-Presidents, DR. THOMAS DARLINGTON, JR., of New York; DR. THOMAS D. COLEMAN of Augusta, Ga.; Secretary, DR. GUY HINSDALE of Philadelphia.

The twenty-first annual meeting will occur June 2, 3, 4, 1904, at Philadelphia.

Recent Literature.

The Medical Epitome Series: Anatomy. A Manual for Students and Practitioners. By HENRY E. HALE, A.M., M.D. Series edited by V. C. PEDERSEN, A.M., M.D. Illustrated. Philadelphia and New York: Lea Brothers & Co., 1903.

This volume purports to be more than the mere essentials of human anatomy. It goes somewhat beyond the scope of the ordinary quiz-compend, and contains in compact form the important points of anatomical knowledge. Questions are appended to some of the chapters.

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THE FORMATION OF BILIARY CALCULI ELSEWHERE THAN IN THE GALL-BLADDER.

AT a recent meeting of the Surgical Section of the Suffolk District Medical Society the question was discussed whether or not calculi formed in the liver after cholecystectomy. It would appear from the chemistry and pathology of biliary calculi that, should they be met with after removal of the gall bladder, they in all probability were there before the operation and had simply remained undiscovered at the time.

The theory that biliary calculi originate from concentration of the bile has long since been laid aside and given place to the view that cholesterin and calcium bilirubinate, which are essential for the formation of calculi, collect about débris of one sort or another which has accumulated in the gall bladder and there become precipitated or slowly crystalize.

The experimental work of Dochmann, which consisted in the ligation of the cystic duct, showed that when obstruction to the exit of bile existed the percentage of calcium in the bile of the gall-bladder increased as compared with that of the liver; and since an increased percentage in the calcium signifies a decrease of solubility of cholesterin, as well as bilirubin, it would be quite rational to conclude that an obstruction to the flow of bile cannot be excluded as an etiological factor in the formation of calculi.

The experiments of Naunyn, however, showed that an increase of the calcium salts of the bile in amounts obtained in Dochmann's experiments were not sufficient to cause the precipitation of calcium bilirubinate to take place. On the other hand, it seems well proven by the experiments of Jankau and Rey that food does not influence the percentage of calcium salts in the bile. When salts of calcium have been absorbed they are secreted again, more especially in the colon. It would also appear that the percentage of cholesterin in the bile is quite independent of the blood in health and disease.

The question of gallstone formation has been treated by Naunyn in a masterly manner and his conclusions must be considered valid at the present day. He demonstrated that a catarrhal process, an angiocholitis desquamativa, is the fundamental cause for the formation of biliary calculi, a view upheld by all to-day.

The epithelial débris which have been cast off consist mainly of cholesterin and lime salts and serve as nuclei for calculi; bilirubin and cholesterin being deposited on these, the calculi continue their growth. The entrance of pathogenic bacteria from the intestine, such as the B. coli or typhosus, are also etiological factors, inasmuch as they give rise to cholecystitis, provided an obobstruction takes place. An injection of the B. coli into the gall bladder will only set up a cholecystitis when the cystic duct has been ligated.

The etiology of cholelithiasis may be summed up as follows: A desquamative catarrh, due to the entrance of pathogenic bacteria from the intestine, followed by an obstruction to the flow of bile.

It is quite evident that theoretically, biliary calculi can form wherever bile is present, therefore they may be developed in the liver, cystic duct and gall-bladder. These are authentic observations proving that calculi may primarily form in the intrahepatic cystic ducts. This, however, must be of most infrequent occurrence, as can naturally be surmised if one considers that in a patent cystic duct the bile current would carry down any nuclei that might be forming and since the cystic duct system becomes broader as its final exit from the liver is approached, it consequently must happen that small calculi originating in the finer branches of the hepatic duct must also be washed down by the bile current passing onward into the choledochus and into the intestine.

Not infrequently calculi have been met with in the hepatic cystic ducts when an obstruction of some duration has been present in the choledochus. In a case operated on by Riedel, which came to autopsy, numerous calculi were found in the hepatic cystic ducts, the cystic and choledochus being obstructed by a large calculus

sending ramifications into each. Other similar cases have been recorded.

As with the intrahepatic ducts, calculi exceptionally form in the hepatic duct and choledochus and a case is reported by Niemer in which he believes that a calculus originated in the hepatic duct. The gall-bladder and cystic duct, as well as the choledochus and hepatic ducts, were full of stones, those in the hepatic being tightly imbedded in the hepatic parenchyma. The intrahepatic cystic ducts contained numerous calculi and bile-stained pus. It is, however, probable that the calculi found in the hepatic duct formed there after the choledochus became occluded by a stone. Other similar cases have been recorded, but it is more than probable that the obstruction of the main ducts was the original cause. It therefore appears that primary formation of calculi in the cystic duct, if occurring at all, is most infrequent. They are usually secondary to obstruction of the choledochus from a calculus coming from the gall-bladder or from pressure without.

REPORT OF THE SURGEON-GENERAL OF THE UNITED STATES NAVY.

THE annual report of the Surgeon-General of the United States Navy for the year 1903 has recently appeared. Many recommendations and suggestions for the improvement of the service are made, and the report, as usual, contains many facts of interest. It appears that since the passage of the law increasing the medical corps up to 150 members, 16 applicants have been successful in meeting the requirements, and there are now but 11 vacancies, which it is hoped may be filled before the expiration of the calendar year. In spite of this increase, it became necessary to increase the medical service by the appointment of acting surgeons for temporary service. In making these appointments particular care was taken to select men fitted, both physically and mentally, for the service, with prospect of promotion to the regular service.

An excellent suggestion is made that the present titles in use by the medical corps are somewhat derogatory to the dignity of their office. It is, therefore, recommended that Congressional action be taken to permit the renaming of the different grades of the medical corps, using, for example, the term surgeon-admiral instead of surgeon-general, surgeon-captain instead of medical director, surgeon-lieutenant in place of past assistant surgeon. Such a change certainly seems in accordance with the dignity which should be invested in men of this branch of the service.

Regarding the matter of hospital ships, certain interesting facts are stated. This country was the first to provide such vessels for active service, but since the recent war with Spain it has fallen behind other nations in this respect. At the last international medical congress the inspector-general of the British Navy's medical corps stated that the British Navy is the only one at present which has a hospital ship permanently in commission. He also stated that eight more ships of this type were being planned, each with a capacity for 200 patients. The need of such permanent ships in the United States Navy is becoming more and more apparent, particularly owing to the policy of the department in carrying on extensive drill operations at distant stations. At recent manœuvres at San Juan, P. R., it is stated that one vessel was unable to take part in the drill, owing to the widespread prevalence of malaria among the crew. This might, it is believed, have been avoided had a hospital ship been available. In general, it is the opinion of the admiral of the navy that for a fleet and base having together a force of 10,000 men, a hospital ship should be provided.

For those interested in the details of the medical management of the Navy, the report should be of much interest. It contains the usual statistical tables and individual reports from the various stations and vessels in active service.

THE RETIREMENT OF DR. EDWARD COWLES.

IN the retirement of Dr. Cowles from active service as superintendent of the McLean Hospital, the branch of medicine which he represents loses an indefatigable worker and a most able executive. His service at the hospital has been long and honorable, dating from Dec. 11, 1879, when he assumed the superintendency of what was then the McLean Asylum. He has therefore been contemporaneous with the striking advances which the last two decades have seen in the study and care of the insane and in the development of the science of psychiatry in its wider bearings. During this eventful epoch, which is surely destined to be but the beginning of a period of continued progress, the institution of which he is the head has unvaryingly been a leader and not a passive follower in the onward movement. There has been no hesitation in accepting the teachings of what has come to be known as the Kraepelin school, and of putting into active practice in this

country the plan of study of mental disease which Kraepelin has done so much to further.

Not the least of Dr. Cowles' services to the profession and to the community has been the unfailing insistence upon the abolition of old methods and the introduction of the new. His influence may be seen in the substitution of the word " hospital " for " asylum," in the development of training schools for nurses in institutions for the insane, and in his capacity to draw to his assistance men of distinguished ability in the various fields of psychiatric research. In his retirement from active service he has the somewhat unusual satisfaction of realizing that he has been closely identified with a movement for the betterment of the insane, in the inception of which he was a participator, and in the consummation of which he has been a constant factor.

Although retiring from the active duties of the superintendency, he becomes a member of the Board of Consulting Physicians, and in this capacity will, no doubt, for many years to come render the hospital a further and peculiarly valuable service.

MEDICAL NOTES.

A Medical Press Exhibit at the St. Louis World's Fair. — An effort is being made to organize a collective and comprehensive exhibit at the St. Louis Exposition of the medical and scientific publications of America. Those interested may communicate with Dr. Charles Wood Fassett, St. Joseph, Mo.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 23, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 80, scarlatina 47, typhoid fever 11, measles 158, smallpox 0.

Centenarian. — Mrs. Honoretta Marshall of Webster, Mass., died in Worcester Insane Hospital, Saturday, Dec. 19, at the reputed age of 105 years 4 months and 12 days.

Sanitary Conferences for the Health Officials of Connecticut. — The Connecticut Board of Health has inaugurated sanitary conferences, to include all the health officials of the state, encouraged thereto by the favorable experiences of such assemblings in neighboring states. The proposed subjects for consideration at these conferences are of an eminently practical character and such as relate to the daily official functions of local health officers.

Bequests to Hospitals. — By the will of the late George W. Boyd the following institutions are benefited, among many others: The Perkins Institution for the Blind, $5,000; Maine General Hospital at Portland, for free beds, $12,500; Maine General Homeopathic Hospital at Portland, for a like purpose, $12,500; Memorial Hospital for Women and Children at Brooklyn, N. Y., for free beds, $5,000; the Children's Hospital, Boston, $5,000. A reversionary interest of $35,000 is also given to the Massachusetts Homeopathic Hospital, and $25,000 to the Massachusetts General Hospital upon the termination of certain trusts.

NEW YORK.

Lincoln Hospital. — The graduating exercises of the training school for nurses of the Lincoln Hospital and Home were held Dec. 12 at the New York Academy of Medicine, when diplomas were awarded to a class of twelve young negro women and an address was made by Booker T. Washington. This institution, which was formerly situated at 65th Street and First Avenue, where it was known as the Colored Home and Hospital, has, since its removal to the Bronx, developed into a full-fledged hospital, with ambulance service, etc.

Appointments, Columbia University. — Among the appointments announced at the monthly meeting of the Trustees of Columbia University held on Dec. 7 were the following: Dr. Thomas B. Morgan, at present Professor of Biology at Bryn Mawr College, to be Professor of Experimental Zoology; Professor Hugo Münsterberg of Harvard University, to be non-resident Lecturer in Psychology for the current academic year.

Suppression of the Mosquito. — A convention, called at the suggestion of the Governor of New Jersey, of scientific men and others interested in the suppression of the mosquito, was held in New York on Dec. 17. Robert W. de Forest, president of the Tenement House Commission and of the Charity Organization Society, was elected permanent chairman, and resolutions were adopted recommending the appointment of a provisional committee to consider the formation of a central organization of national character with which local bodies might co-operate in conducting a general mosquito crusade.

INCREASED WATER SUPPLY. — The completed details of the recommendations of the commission appointed to investigate the most feasible sources for an increased water supply for the city, whose preliminary report in November was recently noticed in the JOURNAL, were submitted by Mayor Low to the Board of Estimate and Apportionment on Dec. 18. With the report of the commission he presented a letter in which he showed the ability of the city, from a financial point of view, to take immediate steps toward the consummation of the desired end, and stated his conviction that the professed new system would eventually be more than self-supporting. He also urged that the incoming administration, upon whom this responsibility will devolve, should give immediate consideration to the great work that has now been outlined.

SMALLPOX. — In view of the prevalence of smallpox in Philadelphia and other Pennsylvania cities, the Board of Health is taking vigorous measures to prevent an outbreak of the disease in New York, and sixty-four new inspectors have been appointed to co-operate with the regular vaccinating corps. In Manhattan but one case of smallpox has thus far been found, that of a Pullman car porter, but there have been several cases in Brooklyn. Investigation showed that they originated with laborers at the Navy Yard, and a dozen inspectors were promptly dispatched to the yard, with orders to vaccinate all the sailors, marines and workmen who did not object. As less than one-tenth of the men (numbering over five thousand) are willing, the Secretary of the Navy has been requested to issue instructions requiring the remainder to submit to vaccination The Pennsylvania Railroad Company has set a good example by ordering all its employees to be vaccinated.

COTTAGE COLONY FOR AGED AND INFIRM. — The Commissioner of Public Charities has awarded a contract for the erection of the first three cottages of a new cottage colony for the aged and infirm poor of the city, which is to be established on Staten Island. Two of them are for women, accommodating thirty each, and one is for aged couples, accommodating twenty couples. The present policy of the Charities Department is to erect all additional almshouse accommodations as this new cottage colony. The almshouses (now known as Homes for the Aged and Infirm) on Blackwell's Island and at Flatbush, Brooklyn, are taxed to their utmost capacity during the winter season, and, with the normal increase in the number of inmates, will soon be quite inadequate to the demands upon them. At neither of these institutions is there any opportunity for outdoor employment for such of the inmates as are able to work a part or all of the day. To the new colony will be assigned the more able-bodied class of inmates; while the infirm and helpless will be left in their present quarters. Each cottage will have attached to it a plot of ground on which the inmates may be employed, according to their various tastes and capacities, and the outdoor life will, no doubt, be of material physical benefit to them.

A CENTENARIAN. — Isaac Price, a native of New York City, died of apoplexy in Greenpoint, Brooklyn, on Dec. 11, in his one hundred and second year. It is stated that he was a total abstainer as regards alcohol, but that he was an inveterate chewer of tobacco, and that it was to its use during practically his whole life he attributed the excellent health which he always enjoyed.

BEQUESTS TO HOSPITALS. — By the will of James King Gracie, the uncle of President Roosevelt, $25,000 is left to the New York Orthopedic Dispensary and Hospital, to be known as the Anna Bulloch-Gracie Endowment Fund, and an additional $5,000 for the endowment of a bed in perpetuity, to be known as the Esther Gracie Ogden bed.

Obituary.

IN MEMORIAM. GEORGE J. ENGELMANN.

AT the December meeting of the Obstetrical Society of Boston the following resolutions was passed:

In the death of Dr. George J. Engelmann the Obstetrical Society of Boston desires to place on record its sense of loss.

For seven years he was a faithful and devoted attendant at its meetings and contributed to their success by his discussions and writings.

He served the society faithfully as president and corresponding secretary.

A man of wide scholarship, kindly, hospitable and courteous, he left many pleasant memories for which he will long be remembered by his fellow members.

Miscellany.

REPORT OF NEW YORK'S TENEMENT HOUSE DEPARTMENT.

ROBERT W. DE FOREST, the Tenement House Commissioner of New York City, has transmitted

to Mayor Low the first report of New York's new Tenement House Department. In it he says:

"On Jan. 1, 1902, a new department of the city government, known as the Tenement House Department, was created. Since that time all the tenement houses in New York have been examined and their condition ascertained.

"The cleansing of the Augean stables was a small task compared to the cleansing of New York's 82,000 tenement houses, occupied by nearly 3,000,000 of people, representing every nationality and every degree in the social scale. The task that confronted the department was not, however, limited to this. Without organization, without employees, with all its problems before it, it was on the very day that it came into existence confronted with an organized and vigorous attack in the legislature upon the fundamental principles of the law for whose enforcement it was created.

"Without previous records, with almost no information in regard to the condition of the existing tenement houses, it was called upon to carry out an important and far-reaching scheme for their improvement, involving the structural alteration of over 40,000 buildings.

"In the period under consideration in this report a new branch of the city government has been organized, its machinery created and a force of about 400 employees trained, disciplined and educated; far-reaching and important advances in legislation have been secured as a result of the department's action, and radical and vicious attempts to break down the tenement laws defeated.

"The existing tenement houses have been frequently and systematically inspected; foul cellars have had the accumulated filth of years removed; defective and unsanitary plumbing which has apparently existed for long periods has been remedied; houses unfit for human habitation vacated; hundreds of houses have been radically reconstructed and improved; light has been let into dark rooms; vile yard privies and privy sinks have been removed and the whole sanitary condition of the city raised to a higher standard. The results of this work are clearly reflected in the reduced death-rate, which in 1902 was 18.7 as compared with 20.0 in 1901, and in the first eight months of 1903 has been reduced to 18.0.

"To those who have borne the burden of the organization of the new department what has been done seems but a beginning — a first step in the endless fight against disease and death."

The report is the most comprehensive report on this subject that has ever been made by a city department, and will shortly be printed, in two volumes, of about 1,000 pages. It will contain many photographs, plans and other illustrations. One of the leading features of the report is a series of colored maps, showing population, density of population and the nationality and the number of families living in each block throughout the tenement districts of the Borough of Manhattan.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 12, 1903.

CITIES.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York . .	3,785,156	1,315	327	21.67	23.11	3.12	2.58	1.14
Chicago . . .	1,885,000	489	123	20.45	19.63	2.24	4.09	1.43
Philadelphia	1,378,527	496	109	21.88	19.56	4.23	.40	2.42
St. Louis . .	618,481	—	—	—	—	—	—	—
Baltimore . .	533,712	214	38	21.49	14.02	1.40	1.40	1.40
Cleveland . .	427,731	—	—	—	—	—	—	—
Buffalo . . .	387,994	—	—	—	—	—	—	—
Pittsburg . .	351,745	154	—	28.28	19.92	2.57	1.48	9.68
Cincinnati . .	335,140	—	—	—	—	—	—	—
Milwaukee .	315,307	—	—	—	—	—	—	—
Washington .	295,103	—	—	—	—	—	—	—
Providence .	191,280	74	30	14.86	18.91	5.40	—	1.35
Boston . . .	603,183	221	55	21.72	20.81	2.26	1.81	.45
Worcester . .	132,044	29	4	13.80	27.58	—	3.45	—
Fall River . .	115,549	34	14	26.47	26.47	2.94	11.76	2.94
Lowell . . .	101,959	33	6	18.18	24.24	6.06	—	—
Cambridge .	98,639	19	5	31.58	5.26	5.26	—	—
Lynn	75,497	20	5	5.00	—	—	—	—
Lawrence . .	89,766	24	6	25.00	12.50	4.16	—	4.16
Springfield .	69,389	19	7	15.79	15.79	—	5.26	—
Somerville .	68,110	22	6	27.27	18.18	4.54	—	—
New Bedford	67,198	21	7	14.28	4.76	—	—	4.76
Holyoke . . .	49,286	21	7	23.81	23.81	—	—	—
Brockton . .	44,873	11	2	27.27	—	—	—	18.18
Haverhill . .	42,104	13	1	16.67	16.67	8.33	—	8.33
Newton . . .	37,794	14	2	7.14	7.14	—	—	—
Salem	36,876	14	5	50.00	—	28.56	14.28	—
Malden . . .	36,386	11	3	36.36	9.09	—	—	—
Chelsea . . .	35,876	15	4	26.66	6.66	—	—	—
Fitchburg . .	35,069	—	—	—	—	—	—	—
Taunton . . .	33,656	11	—	—	—	—	—	—
Everett . . .	28,620	4	2	—	—	—	—	—
North Adams	27,862	4	—	25.00	25.00	—	—	25.00
Gloucester .	26,121	—	—	—	—	—	—	—
Quincy . . .	26,042	12	6	25.00	33.33	16.67	—	—
Waltham . .	25,198	9	—	11.11	22.22	—	—	11.11
Brookline . .	22,608	—	—	—	—	—	—	—
Pittsfield . .	22,589	—	—	—	—	—	—	—
Chicopee . .	21,031	4	0	—	25.00	—	—	—
Medford . .	20,962	5	2	20.00	—	—	—	—
Northampton	19,883	9	2	11.11	22.22	—	—	—
Beverly . . .	15,302	4	—	25.00	—	—	—	—
Clinton . . .	15,161	4	—	—	—	—	—	—
Leominster .	14,806	—	—	—	—	—	—	—
Newburyport	14,478	7	0	28.60	—	—	—	—
Woburn . . .	14,300	3	2	66.67	—	—	—	—
Hyde Park .	14,175	6	1	33.33	16.67	—	—	—
Adams . . .	13,745	1	0	—	—	—	—	—
Attleboro . .	13,677	—	—	—	—	—	—	—
Marlboro . .	13,609	3	0	33.33	—	—	33.33	—
Melrose . . .	13,600	—	—	—	—	—	—	—
Westfield . .	13,418	0	—	—	—	—	—	—
Milford . . .	13,129	—	—	—	—	—	—	—
Revere . . .	12,722	—	—	—	—	—	—	—
Framingham	12,534	4	—	—	25.00	—	—	—
Peabody . . .	12,179	—	—	—	—	—	—	—
Gardner . . .	11,928	—	—	—	—	—	—	—
Weymouth .	11,344	4	0	—	—	—	—	—
Southbridge .	11,268	—	—	—	—	—	—	—
Watertown .	11,077	1	0	—	—	—	—	—
Plymouth . .	10,730	—	—	—	—	—	—	—

Deaths reported, 3,377; under five years of age, 771; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 729, acute lung diseases 677, consumption 392, scarlet fever 20, whooping cough 11, cerebrospinal meningitis 10, smallpox 24, erysipelas 5, puerperal fever 12, measles 17, typhoid fever 63, diarrheal diseases 73, diphtheria and croup 102.

From whooping cough, New York 4, Pittsburg 2, and Chicago, Philadelphia, Baltimore, Boston and Woburn 1 each. From smallpox, Philadelphia 16, Pittsburg 8. From cerebrospinal meningitis, New York 7, Baltimore 1, Lynn 1, Woburn 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Nov. 28 the death-rate was 17.6. Deaths reported, 5,092; acute diseases of the respiratory organs (London) 200, whooping cough 92, diphtheria 49, measles 114, smallpox 4, scarlet fever 30.

The death-rate ranged from 8.0 in Hornsey to 29.6 in Sunderland. London 17.4, West Ham 17.4, Brighton 13.3, Southampton 18.9, Plymouth 19.5, Bristol 16.8, Birmingham 17.6, Leicester 15.4, Nottingham 19.1, Liverpool 21.7, Bolton 17.4, Manchester 20.6, Salford 20.5, Bradford 16.6, Leeds 20.2, Hull 16.7, Cardiff 16.0, Rhondda 14.4, Merthyr Tydfil 21.1, East Ham 12.3, Warrington 23.6, York, 24.7.

METEOROLOGICAL RECORD.

For the week ending Dec. 12, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S.. 6	30.00	32	38	25	68	65	66	W	W	12	12	C.	C.	0
M. 7	29.96	34	40	28	72	60	66	S W	S W	9	10	F.	C.	0
T.. 8	30.04	38	44	31	84	62	73	S W	N	8	6	C.	C.	0
W. 9	29.68	43	52	34	74	100	87	N E	N E	8	30	O.	R.	.32
T.. 10	29.43	42	52	32	87	70	78	S W	S W	20	10	O.	C.	.43
F.. 11	29.96	32	37	28	76	46	61	W	S W	10	8	C.	C.	0
S.. 12	30.30	34	45	24	74	66	70	S W	S	12	10	C.	O.	0
☞	29.91		44	29			72							.75

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.

At the last meeting of the Surgical Section the members voted to leave the details of the arrangement of future meetings to the chairman and secretary. It has seemed best to Dr. Harrington and myself to arrange for four meetings, to take place on the first Wednesdays of January, February, March and April. At the next meeting we are going to discuss the question of early operation in diseases of the stomach, but the subjects for the other three meetings have not been decided upon. The subjects for these discussions will, however, be announced at the next meeting, so that members may have an opportunity to look up the results of cases they have operated upon.

It is hoped that the Surgical Section may, this year, be rather a meeting for the discussion of mooted questions in everyday surgical practice than an opportunity of reporting rare cases, or of presenting digests of the papers of foreign operators. Interesting pathological subjects, or the patients themselves, may be shown at the first of the meeting, but the bulk of the evening will be devoted to discussion rather than to the reading of papers. Meetings will be held around the table in the reception room of the library, and smoking will be permitted, if so voted at each meeting by the members present. The Section proposes to send invitations to attend the meetings this winter to surgeons of the smaller hospitals in the suburbs and surrounding towns. Members of the Massachusetts Medical Society who wish to have notification postals sent them before each meeting may send their names to the Secretary.

On the next notification postal the following questions will be printed, as of especial interest in the discussion:

How often is persistent stasis of the stomach contents due to a purely functional condition?

Should exploration be advised as a routine in cases of marked stasis of the stomach contents?

Comparative results of medical and surgical treatment in cases of stasis?

E. A. CODMAN, M.D., Secretary.

RECENT DEATHS.

CORNELIUS M. O'LEARY, M.D., of Manhattanville, New York City, was killed by a motor train in Brooklyn on Dec. 12. He was born in Ireland sixty-four years ago and was a graduate of the College of Montreal. In 1862 he was graduated from the Medical Department of the University of the City of New York, and upon the death of his father, in 1864, succeeded him as professor of philosophy and classics in Manhattan College. He retained his chair up to the time of his death, but also conducted an extensive medical practice. In 1870 he was appointed an inspector in the New York Health Department and in 1871 was made a commissioner of pharmacy. Dr. O'Leary was also a writer of some note, especially on evolution and allied subjects, and was an ardent disciple of Herbert Spencer.

FRANCIS W. HIGGINS, M.D., of Cortland, N. Y., died suddenly of cardiac disease on Dec 18, at the age of forty-six years. He had been president of the Third District Branch of the New York State Medical Association and a vice-president of that society.

SAMUEL FOSTER QUIMBY, M.D., M.N.S.S., died in Salem, Mass., Monday, Dec. 21, at the age of sixty-three years. He was a member of the staff of the Salem Hospital, and had practised his profession in Salem for nearly forty years. Dr. Quimby was a graduate of the Harvard Medical School, and a member of the Massachusetts Medical Society and of the Harvard Medical Alumni Association.

ERRATUM.

IN the first line of the last paragraph of Dr. F. H. Williams' letter on radium salts, in the last issue of the JOURNAL, for "I am *not* studying the therapeutic effects," read: "I am *now* studying," etc.

BOOKS AND PAMPHLETS RECEIVED.

The Nature of Man. Studies in Optimistic Philosophy. By Elie Metchnikoff. The English Translation edited by P. Chalmers Mitchell, M.A., D. Sc. (Oxon.) Illustrated. New York and London: G. P. Putnam's Sons. 1903.

Clinical Pathology of the Blood. A Treatise on the General Principles and Special Applications of Hematology. By James Ewing, A.M., M.D. Second Edition. Revised and Enlarged. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1903.

Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D. Fourth Edition. Rewritten and enlarged. Illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

A Manual of the Practice of Medicine, Prepared especially for Students. By A. A. Stevens, A.M., M.D. Sixth Edition. Revised and Enlarged. Illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

The Four Epochs of Woman's Life. A Study in Hygiene. By Anna M. Galbraith, M.D., with an Introductory Note by John H. Musser, M.D. Second Edition. Revised and Enlarged. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

Manual of Medicine. By Thomas Kirkpatrick Monro, M.A., M.D. Illustrated. Philadelphia and New York: W. B. Saunders & Co. 1903.

General Pathology or the Science of the Causes, Nature and Course of the Processes of Disease. By Dr. Ernst Ziegler. Translated from the Tenth Revised German Edition and edited by Aldred Scott Warthin, Ph.D., M.D. Illustrated. New York: William Wood & Co. 1903.

The Medical Annals of Maryland, 1799-1899. Prepared for the Centennial of the Medical and Chirurgical Faculty. By Eugene Fauntleroy Cordell, M.D. Baltimore, 1903.

The Practice of Medicine. A Text-book for Practitioners and Students, with Special Reference to Diagnosis and Treatment. By James Tyson, M.D. Third Edition. Thoroughly revised and in parts rewritten. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

Transactions of the New Hampshire Medical Society at the One Hundred and Twelfth Anniversary, held at Concord, May 21 and 22, 1903.

The Medical Directory of New York, New Jersey and Connecticut. Published by the New York State Medical Association. Vol. V. 1903.

Chronic Cyanotic Polycythemia, with Notes upon Two Cases. By J. N. Hall, M.D., of Denver, Col. Reprint. 1903.

International Clinics, a Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by A. O. J. Kelly, A.M., M.D. Vol. III. Thirteenth Series, 1903. Philadelphia: J. B. Lippincott Co. 1903.

Transactions of the American Ophthalmological Society. Thirty-ninth Annual Meeting, Washington, D. C., 1903. Vol. X, Part 1.

Text-Book of Diseases of the Eye for Students and Practitioners of Medicine. By Howard F. Hansell, A.M., M.D., and William M. Sweet, M.D., with chapters by Christian R. Holmes, M.D., Casey A. Wood, M.D., D.C.L., and Wendell Reber, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1903.

Handbook of Diseases of the Ear. For the Use of Students and Practitioners. By Richard Lake, F.R.C.S. (Eng). Illustrated. New York: William Wood & Co. 1903.

Report of the Surgeon-General, U. S. Navy, Chief of the Bureau of Medicine and Surgery, to the Secretary of the Navy. 1903.

Uniform Municipal Accounting and Statistics. By Dr. Edward M. Hartwell of Boston. Published by The National Municipal League. 1903.

Original Articles.

TYPHOID FEVER IN CHILDREN.[1]

BY ADOLF BAGINSKY, M.D., BERLIN, GERMANY.

Professor of Children's Diseases, University of Berlin; Director of "Kaiser und Kaiserin Friedrich Kinderkrankenhaus."

Typhoid fever of children, although known and often mentioned by the older authors, was considered to be a rare disease until the latter part of the nineteenth century, but progress and rich experience since then have taught us that it is frequent and a disease of great interest to the practitioner.

In his "Historical Study and Pathological Anatomy of Typhoid Fever of Children," V. Szokalski [2] states that Roederer and Wagner, in an essay entitled "De Morbo Mucoso," mention that this disease does occur; on the contrary, Petit and Serres describe under the name "Febris Entero Mesenterica," what they consider merely a disease of adults. Typhoid has since been known under other names, as, *e. g.*, "Entero Folliculosa," "Febris Typhoides," "Typhus Fever" and "Nerve Fever." We find, however, from Abercrombie,[3] in his monograph, "Diseases of the Digestive Canal," in the chapter, "Diseases of the Mucous Membrane of Children," the dangerous forms are so pictured that one is able to recognize typhoid fever from the description: "The fever is high, the tongue dry and leathery, the thirst increased; in other cases a sudden loss of vitality is observed which can in no way be accounted for by the frequency of the intestinal discharges, followed by coma and a look of general exhaustion. The autopsy shows in the intestine, particularly in the ileum, a variety of inflamed and slightly elevated spots sown with small vesicles and ulcers."

Somewhat later Wendt,[4] Evanson and Mannsell,[5] Meissner,[6] Constant [7] and Becqueral [8] more of less thoroughly considered the disease, but Taufin [9] and Rilliet,[10] through careful studies, made known its definite course, and in the "Handbook of Children's Diseases," by Barthez and Rilliet, a true picture of the disease is portrayed. From German authors we find a presentation of typhoid in children from Löschner,[11] in which it is interesting to note that in 104 cases he found 1 case under one year of age, 5 cases between one and four, 17 cases between four and five, 37 cases between five and seven, 20 cases between eight and nine. These facts led him to the conclusion that typhoid most frequently afflicts children between the ages of five and nine years.

The literature of the subject has recently become very rich. The course of the disease is somewhat similar to that in adults, yet in children so many peculiarities show themselves that a special study of the subject is interesting and necessary from a therapeutic standpoint.

ETIOLOGY.

Löschner agrees with the preceding authors that typhoid is more rarely seen in infancy than in later childhood; but this may be only apparent and an error of observation, because it is probable that typhoid in sucklings often is present in cases which are diagnosed as feverish dyspepsia. Further and more accurate observation will be necessary to make this point perfectly clear. Koch,[12] in his latest publication on the prevention of typhoid, alludes to the, as it were, latent typhoid in children. On this account the following observations must be accepted with caution: In the typhoid epidemic [13] in the Saxon village of Eggenslädt, observed by me, there were in 90 cases only 16 children under ten years of age. Henoch, in 97 cases, saw only two under one year of age, 21 between two and five years, 89 between five and ten years. Steffen records 148 cases — two under one year old, 28 between three and six years and 34 between six and nine years of age. In 277 cases observed by Wolberg, the majority were between six and twelve years of age. In the Kaiser und Kaiserin Friedrich Kinderkrankenhaus in Berlin I have observed 88 cases, of which 17 were between one and four years, 41 between four and ten years and 30 between ten and fourteen years old. There were 51 boys and 37 girls.

According to general observation and experience boys are more susceptible to typhoid than girls. This may be from the fact that boys by their superior quickness and more frequent contact with each other are more exposed to infection than girls, through taking water, milk, etc., away from home.

The accumulated evidence of recent years points to the conclusion that typhoid fever is most commonly spread by means of fecal infected water, milk or other liquid nourishment. Thoinot,[14] Vallin, Landouzy and Hanriot have all written concerning the epidemic in Paris in July and August, 1898, following the use of typhoid infected street water; likewise the epidemic in Dresden, reported by Hesse,[15] and the one in Bern, reported by Stoss,[16] were, all, as well as hundreds of others, referred to the result of infected water. The epidemic in Holland, according to Verbeck,[17] Dazy [18] and some others, was caused by infected milk. Koch, in the

[1] Translated by Dr. C. T. Warner, Marlborough, Mass.
[2] Victor Szokalski: Journal f. Kinderkrankheiten, Bd. viii, Nov. 1846.
[3] Abercrombie: Edinburgh Journal, 1820.
[4] Wendt: Die Kinderkrankheiten systematisch das gestellt, 1837.
[5] Evanson & Mannsell: Kinderkrankheiten, 1836.
[6] Meissner: Kinderkrankheiten, 1838, Leipzig.
[7] Constant: Gazette médicale 1833-1336; Review of Baudelocque's Clinic in the Children's Hospital, Paris.
[8] Becqueral: 1839.
[9] Taufin: Journal de connaiss. medico-chirugical, Nov. & Dec., 1839; Jan., 1840.
[10] Rilliet: Dissertation, Jena, 1840.
[11] Löschner: Uber den Typhus der Kinder. Journal f. Kinderkrankheiten, 1845, Bd. v.
[12] Robert Koch: Die Bekämpfung des Typhus.
[13] Baginsky: Virchow's Archiv, Bd. xlix, 1868.
[14] L. Thoinot: Note sur la fièvre typhose à Paris, 1889. Vallin, Landouzy et Manriot: Rapport sur un mémoire de Thoinot. Académie de Médecine, p. 377, 1900.
[15] Hesse: Typhus epidemie in Löftan. Deutsche med. Woch., 1899, No. 35.
[16] Stooss: Sitzungsbericht der med. pharmac. Vereins, Bern, Dezember, 1898.
[17] Verbeck.
[18] Dazy: Verpreiding van febris typhoida door melk, Weekblad 38, Januar, 1899.

already mentioned publication, has somewhat shaken confidence in the above reports, since he has shown that typhoid is more or less transmissible from person to person, and this is particularly liable to be the case with the not seriously ill. That typhoid of children is exceedingly easy to transmit has been apparent for a number of years, to the detriment of the children's department of our hospital. Children are more easily the carriers of infection, because they are naturally more careless about soiling the surroundings. In the hospital a nurse and an assistant became sick from the disease, and only by the observance of the most scrupulous cleanliness were similar occurrences prevented. I had, however, before this, observed the progressive spreading of the disease from person to person and from place to place — the latter being carried by persons. Notwithstanding all this, the spreading of the disease by means of water, milk, infected food, etc., cannot be denied, and the most careful attention must be given to the cleansing of the wells, watercourses and bathing pools. A source of danger to children lies in closed bath houses, as the water may easily become contaminated by germs from the mouth or nose of those infected. The spreading of the disease through the medium of flies, as asserted by Vaughan,[19] and as I myself almost to a certainty believe to have seen, must not be lightly regarded.

The season of the year plays an important part in the spread of the disease, by far the largest number being observed in the autumn; at least, this is true in Berlin, but sporadic cases are observed throughout the year. No one to-day doubts that typhoid fever is produced by a specific germ, the typhoid bacillus. This germ was first seen by Eberth in the intestinal mucous membrane, lymph glands and spleen, and described by him in the year 1880. Almost at the same time Robert Koch observed the germs in the intestinal wall, and proved their existence by coloring and photographing them. The bacilli were then thoroughly studied by Gaffky, who, in 1884, developed a pure culture of them, and also through cultures upon the potato proved their growth and peculiarities. The literature of the subject has now become so voluminous that in this article it is only possible to mention the most essential points, and besides much more remains to be proved on the special bacteriology of typhoid.[20] The difficulty[21] of separating the typhoid bacillus from the great colon group and other intestinal bacteria caused considerable expansion of the literature of the subject. But finally the discovery of certain biological phenomena connected with the growth and life processes of the typhoid bacillus, together with clinical observation, has helped to clarify the subject. This is particularly true of the so-called agglutination process. The typhoid bacilli most closely resemble the colon bacteria in their appearance, size and ordinary circumstances of growth, and are characterized by an exceedingly great motility on account of the large number of flagellæ with which the whole body is supplied. They are not colored after Gram's method form in a sugar culture medium; few or no gas bubbles (in strong contrast to the colon bacilli); grow in sterilized milk without coagulating it (thereby showing the acid formation to be very insignificant), and form in an albuminous medium no indol. The dull appearance when grown upon the potato, looking like a thin mucus, is considered by Gaffky and others to be an essential in its differentiation from the colon bacilli, but this statement, like so many others, has proved uncertain and unreliable. They grow best at the body temperature, and are both aërobic and anaërobic. Gelatin, even after the bacilli have grown on it for a long time, does not become liquid, and still more characteristic, the stab cultures become filled and the surface covered. Colonies upon the gelatin plate after twenty-four hours are characterized as sharply defined, circular or whetstone-shaped bodies, and after forty-eight hours appear brownish in color, more granular, more delicate and thin, growing out in so-called grape-leaf forms. The behavior of the bacilli to the litmus whey is important. Petrushky observed that when the typhoid culture was carried into litmus whey the neutral violet color became reddish, the whey remaining perfectly clear, while on the contrary the colon bacteria make the whey dark red and at the same time cloudy. It is necessary with this otherwise important test to make a control test, comparing the color and general behavior with a pure typhoid culture. The formed acid in the litmus whey culture must not exceed 0.3% of the normal acid. We also distinguish the typhoid bacilli from the colon bacilli by Barsiekow's litmus nutrose solution (1.0 nutrose, ½% whey, 1% either grape sugar or milk sugar). The grape sugar solution becomes acid, reddened and curdled from both the typhoid and colon bacilli, while the milk-sugar solution is changed by the colon group but not by the typhoid bacilli. When grown upon a litmus-colored nutrose medium, the typhoid bacilli do not alter the medium, and the colonies have a blue color, while the colon bacilli redden the medium and the colonies appear red.

All the above reactions must be studied and controlled in relation to each other before we can certainly say that the bacillus in question is a typhoid bacillus. The most important test, however, is the certainty of the biological reaction, which was originally studied by Pfeiffer and Kolle,[22] and which Widal worked out into a standard clinical reaction. Animals previously treated with typhoid bacilli very soon form substances in their blood which in high dilutions are able quite specifically to cause the typhoid

[19] Vaughan: Am. Journ. Med. Sci., July, 1899.

[20] P. Baumgarten: Lehrbuch der pathologischen Mycologie, Braunschweig, bei Bruhn, 1890.

[21] W. Knoll u. A. Wassermann: Handbuch der pathologischen Microörganismen, Bd. II, p. 204, Abschnitt II. Typhus, von F. Neufeld. Gustav Fischer, Jena, 1902.

[22] W. Pfeiffer u. W. Kolle: Deutsche med. Woch., 1896, No. 12, p. 185.

bacilli to come together into clumps. This agglutination test is the most certain, because it is quite specific for the typhoid bacillus. Widal [23] then proved that this agglutination ability of the blood serum also occurs in man, and often during the first days of the illness, so that it may be accepted as a specific diagnostic aid. The typhoid bacilli occur in the stools, the urine, the blood, the saliva and in almost all the organs of the body, and may not only be proved in the above-mentioned secretions and in the skin of the patient during life, but also in the organs after death — and Pfeiffer, Simmonds, Fraenkel, Kilcher and many others have cultivated the bacilli from corpses; Widal and Chantemesse found the bacillus in the placenta of a four months' fetus; Giglio and Frascani found it in fetal blood (see literature by Burdach, *l. c.*, p. 314); Locatello, in the saliva and mucous membrane of the larynx; and Ebermeyer, Quincke and others, in the marrow of the bones. The bacilli may also be found in the pus of abscesses accidentally accompanying typhoid, as I have proved in one case and also as shown by Spirig, Klemm, Hintze and others. Neuhaus, Curschmann and others have proved their presence in the rose spots of the skin, and A. Fraenkel, in pneumonic consolidations of the lungs. The recently much-studied existence of the typhoid bacilli in the urine is very important on account of its contagiousness and peculiar liability to be transported. Konjajeff, Levy and Gisler, Urban, Petruschky, Burdach and a great many more have investigated this branch of the bacteriology of the urine, and have suggested that this may be the cause of albuminuria and inflammatory irritation of the kidneys occurring in the course of the illness. As already said, we must limit ourselves to these few hints from the enormous literature of the subject, but they are sufficient to bring out the clinical importance of the typhoid bacillus.

It is not certainly known how the typhoid bacilli affect the human organism. It is known, however, that they create necrotic processes in the places first attacked, as is observed in the ulceration of Peyer's patches, but other lesions may be characterized as the result of their direct action on the tissues. However, their effects are not only attributable to this direct action, but much more to the action of the toxins which are produced in the system by the bacilli, because the severe general symptoms of typhoid can hardly be considered otherwise than as of a toxic nature. It still remains very questionable whether the metabolic product of the typhoid bacillus made by Brieger and called by him *typhotoxine* ($C_7H_{17}NO_2$) has anything to do with these effects.

PATHOLOGICAL ANATOMY.

The pathological anatomy of typhoid of children is distinguished from that of adults by the greater prominence of the degenerative and necrotic process in the intestine of the former and by the more evident hyperplastic process of the latter. The intestine of children shows solitary follicles and swollen patches which are elevated above the surrounding tissue. These are pink in color and their surroundings profusely injected. The microscope shows new cell formation in addition to simple injection and swelling. Necrotic and ulcerative processes occur very often— Montmollin in Basel recording 77%, Pfeiffer 72% and Gerhard 67.5%. I have seen very extensive intestinal ulceration in children, and have described one important case. Two of my patients died of peritonitis due to perforation. The ulceration is not at all different from that observed in adults. We find the rod-shaped micro-organisms, the bacilli, in the mucous membrane, in the sub-mucosa and as far as the mesenteric glands. The muscles are dry, dark and show what Zenker speaks of as waxy degeneration. In the brain Popoff [24] describes nuclear division in the ganglionic cells and immigration of lymphoid cells, division of protoplasm of the nerve cells, accumulation of migratory cells in the perivascular tissues and along the nerve filaments, and finally deposits of fat and pigment granules in the ramifications of the blood vessels and nuclear division in the capillaries of the brain — all taken together being the result of previous inflammation. These statements in their essential particulars have been recently attacked by Herzog Carl,[25] Blaschko and Rosenthal, although maintained by Popoff. Langworth [26] describes serious lesions of the peripheral nerves and also of the motor cells of the anterior horn (change of the nucleus, dissolution of the Nissl granules) of the spinal cord. The spleen is enlarged, congested and soft; the mesenteric glands are swollen and do not differ from the typhoid glands of adults. The heart is, as a rule, flabby, the muscles brittle, the muscle nuclei very much degenerated, and the muscle fibers have undergone fatty degeneration. The lungs are frequently the seat of atelectasis and catarrhal pneumonia. Typhoid ulcers of the larynx have often been described and fibrinous laryngeal affections with medullary infiltration of the mucous membrane frequently occurs. The statements of Eugene Fraenkel concerning the rose spots of the skin are also interesting, as he found the typhoid bacilli in the surroundings of the blood vessels of the swollen papillæ. Besides these regular conditions we find fibrinous coating of the tonsils, abscesses of the middle ear, swelling of the parotid gland, gangrene of the mouth, cheek and also of all the soft parts of the face. In some cases considerable meningeal effusion has been observed, but real meningitis is very rare. Peritonitis through perforation of an intestinal ulcer is not frequent, but I have observed it in several fatal cases. The kidneys of patients who die during the height of the fever

[23] Widal: Semaine médicale 1896, 15 Juli u. O. Forster: Literatur, verzeichnis zur Widalschen Reaction. Zeitschr. f. Hyg., Bd. xxiv, p. 501. auch Burdach: Zeitschr. f. Hyg., Bd. xliv, 1902.

[24] Popoff: Virchow's Archiv, Bd. lxiii, 1, 32, u. 87.
[25] Herzog Carl: Ibidem, Bd. 69, 1887.
[26] Langworth: Journ. of Exp. Med., vol. xiv, No. 2.

show parenchymatous swelling and clouding of the epithelium, but rarely a genuine nephritis.

SYMPTOMS AND COURSE.

The majority of cases of typhoid fever in children begin with ill-defined and indefinite symptoms. Particularly is this true of very young children. The beginning is usually marked by headache, pains in the throat, loss of appetite, ill-humor, restlessness, thirst and moderate fever. Sometimes diarrhea is an early symptom, but constipation is more commonly observed. After a time the fever increases, accompanied by decided somnolence. The children sleep a great deal, the lips are dry, the tongue is coated gray white with red edges and a triangular red point. The eyes are somewhat injected, the abdomen is soft upon pressure but at the same time painful. Gradually the spleen becomes swollen — detected in the beginning only by means of percussion, but later by palpation. About this time, usually from the sixth to the ninth day, the roseola appear on the skin as small, isolated, slightly elevated spots. The abdomen is soft and slightly swollen. Epistaxis is an occasional symptom at this period of the illness and may become very misleading, for, as I have observed in a girl eight and a half years old, the blood may be swallowed and when vomited be mistaken for melena. Diarrhea is now frequent, the stools being foamy, brownish, fetid and thin or liquid. The somnolence becomes more and more marked, the child being with difficulty awakened and again very soon falls asleep. The hearing now often becomes difficult and cough is frequently a troublesome symptom. As a rule the physical examination reveals sonorous and sibilant râles and sometimes the percussion note is duller than normal in the lower posterior thoracic border. The facial expression is dull and apathetic, the child lies on his back and sinks into the bed. When being examined he usually cries and struggles, sometimes very energetically, but at other times will permit himself to be disturbed without offering resistance, depending, of course, upon the degree of somnolence. At this time there are two reactions to be observed: the diazo reaction of the urine, described by Ehrlich, and the Widal reaction (agglutination of the typhoid bacilli culture by the blood). This condition continues a longer or shorter time according to the severity of the illness. The lighter cases now improve gradually from day to day, the little patients showing more interest in their surroundings, at the same time becoming capricious and whining. The tongue, which till now has been dry and often red upon the point and edges, becomes pale, the coating more moist and thinner, the lips lose their coating and are not so fissured. Diarrhea ceases, cough becomes more frequent but looser. The roseola vanish. In place of the diarrhea comes an inclination to constipation. In the more difficult cases the advent of convalescence is much longer deferred, sometimes till the end of the third week and even longer; then the child slowly loses apathy and dullness and the individual symptoms in the manner already pictured. Very gradually the condition returns to the normal, at the same time the appetite is markedly increased. In the meantime the patient has lost much flesh, and the low condition now makes itself clearly apparent. The fever now slowly sinks and gradually disappears.

The observation of the course of the temperature is a most important aid in diagnosis. The symptoms are often every indefinite, particularly in the early stage of the illness, and in these cases the fever has often led to a correct diagnosis before the other symptoms were pronounced. In general, especially in older children, the fever comes on slowly, but in younger children it is more apt to begin suddenly, often being characterized by rapidly rising temperature (Wolberg). In the slower forms of onset the temperature seems to rise by degrees. The evening temperature of the first days is always higher than the morning temperature of the same day, and the morinng temperature of the next day is nearly as high as the temperature of the preceding evening. The fever reaches to the height of 40° C. to 40.5° C. (104 to 105° F.), and sometimes higher by the end of the first week, remaining at this height several days when not influenced by treatment, showing a difference of about 1° C. between the morning and evening temperature; then begins a gradual sinking of the morning fever and at the same time the still high evening fever becomes less. Finally the morning fever becomes normal and the evening exacerbations less marked and disappearing, at the same time the morning temperature going below normal. The fever may disappear inside of two weeks, but according to the observations of Hensch, Montmollin and others the larger number of cases require two weeks, while a somewhat smaller number require three weeks. This is proved by a large number of clinical charts and my own observations. It is important to observe the influence of age upon the duration of the fever. Wolberg found the fever duration with children between three and five years to be fourteen days, and with children above that age seventeen days. Long continuous fever comes almost exclusively in older children, and the interesting fact is learned from Montmollin's studies that from the first to the tenth year of life typhoid has a steadily increasing duration. This study showed that during the first year of life the duration was 12.3 days, in the fifth year 15.7 days, in the eighth year 18.3 days and in the tenth year 20.3 days; from then it appears to hold quite constantly to a duration between these limits. Of course these average results must not be applied in attempting to determine the duration of an individual case, but in general we can agree with Montmollin that the course of the fever in children, so far as the duration is concerned, is milder than in adults, but the severity of the illness in its individual phases will be found quite as serious. My observations are in essential accord with the foregoing remarks, and I must once

more emphasize the fact that in single cases of typhoid in children the course of the fever both in its duration and severity is on a par with the worst cases in adults. I have before me a temperature chart showing a fever of 40° C. (104° F.) or higher for more than two weeks, which was reduced only by means of energetic antipyretics, and remained lower but a short time. Such cases generally pursue a very severe course and end fatally. The temperature does not always fall by lysis, but more commonly by crisis similar to pneumonia, and is observed about the end of the second week, after which recovery begins. The frequency of the pulse beat corresponds pretty closely to the elevation of temperature, 100, 120, 140 in the morning, not so rapid as in the evening, and it is usually dicrotic, as in adults. During the height of the fever the pulse is irregular and intermittent, indicating a considerable heart weakness and a threatening heart paralysis. In such cases the heart tone is dull with an absence of the second sound. or the tones are divided. I have treated one case of typhoid complicated by chorea with very pronounced galloping tachycardia,but which was undoubtedly of some duration before the typhoid attack. It is not rare to hear a soft systolic murmur over the heart apex. During the convalescent stage we often observe an irregularity of the pulse and an acceleration of the sphygmograph tracings — a visible evidence of heart weakness.

(To be continued.)

ACUTE FLEXION OF THE GALL BLADDER AS A CAUSE OF BILIARY COLIC. ITS RELIEF BY OPERATION.

BY A. T. CABOT, A.M., M.D., BOSTON,

Surgeon to Massachusetts General Hospital.

IN 1896 Fenger read before the American Surgical Association a paper[1] in which he described cases of biliary colic and jaundice which he believed to be due to an obstruction in the biliary passages, caused by a bending or kinking of the ducts. He also urged that a valvular condition might be brought about by an oblique insertion of the common duct into the duodenum. In supporting his views, he cited what authorities he could find in the literature of the subject, but in his study of these conditions he found no suggestion that a bending of the gall bladder itself could give rise to symptoms requiring an operation for their relief.

I wish to put on record two cases in which characteristic attacks of biliary colic seem to have been caused by the acute flexion of the gall bladder at about its middle. In all such cases when there are adhesions it is difficult to recognize on the operating table the exact condition which is responsible for the colic. As the operation is usually done in a period of quiescence, between attacks, it is plain that in many cases the mechanical obstruction or drag is not in action at the time of operation. It is conceivable and probable, when the stomach or colon are united to the gall bladder or the gall ducts by adhesions, that the drag of these viscera is responsible for the distortion which causes the colic.

This drag may be very much increased when these viscera are loaded and may amount to but little when they are empty. Fully recognizing the uncertainties that surround the determination of the causes of colic in these conditions, I present the following cases with a statement of my reasons for thinking the flexion of the gall bladder responsible for the colic:

CASE I. Mrs. H. E. R., a strong and healthy woman approaching fifty years of age, had for years been subject to attacks of pain in the right hypochondriac region. This pain had a tendency to shoot up into the right shoulder. Nausea associated itself with some of these attacks. Dr. Charles Folsom, who had watched her for years, thought that in some of her attacks the conjunctivæ were slightly yellow, but she never had any distinct icterus. Dr. Folsom and Dr. F. C. Shattuck, who saw her in consultation, both thought the attacks probably due to gall stones, though none had ever been seen in the stools. I saw Mrs. R. in February, 1899, and concurred in the belief that gall stones probably existed. At this time, I felt what I took to be the somewhat distended gall bladder in the usual place. The examination was, however, much interfered with by the thickness of the abdominal wall, which besides a thick adiposa had a strong and rather rigid muscular layer.

An operation was advised and accepted.

On Feb. 25, 1899, I operated. Under ether, when relaxation was complete, I could make out that what I had believed to be the gall bladder was, in fact, the end of one of the floating ribs. The lower ribs curved sharply inward and reached much nearer the umbilicus than usual. An incision was made just below and parallel with the costal margin. The liver lay high up under the ribs and its lower edge was pressed by them inward towards the middle line of the body.

The gall bladder was rather long, with its fundus extending below the edge of the liver and the pressure of the ribs carried this fundus downward and inward, producing a distinct bend or kink in the middle of the gall bladder. When the fundus was drawn outward, this bend was effaced, but it reproduced itself when the gall bladder was allowed to fall back into its usual position. Light adhesions existed between the gall bladder and the colon, but these exerted no appreciable drag on the organ, and certainly could not be accused of producing any distortion of the ducts. The gall bladder was opened, but nothing found within it to account for the attacks of pain. In order to efface the bend above described, the fundus of the gall bladder was drawn outwards and attached to the parietal peritoneum, a drainage tube being inserted within it. Recovery from this operation was satisfactory, and the patient had no more attacks of pain simulating hepatic colic. She did, however, have at times a pain lower in the right side which presently pointed so distinctly to the appendix as its cause that appendectomy was done in the summer of 1902. I found the appendix bent and adherent. Since that operation Mrs. R. has been exceedingly well and strong.

There was no doubt that the first operation was followed by a decided relief of a distinct hepatic colic. There was, however, for a considerable time a sense of uneasiness in the right hypochrondrium which I ascribed to the tension of the gall bladder.

CASE II. Dec. 18, 1901, I saw, in consultation with Dr. C. J. McCormick, J. R., a strong, well-developed and

[1] Retention from Displacement, Bending and Valve-formation (oblique insertion) in the Biliary Tract. Med. Standard, Chicago, Nov., Dec., 1896, and Jan., 1897.

healthy looking man who gave the following history: — Twenty-one months previously he had had an attack of pain in the right hypochondriac region. This pain did not radiate to the shoulder and there was no icterus. The attack gradually passed away. A year later he had a similar attack in which the pain lasted all the spring. Then, he was easier through the summer. Five days before our consultation the pain again attacked him suddenly, and now, for the first time, vomiting was associated with the attack. He was still suffering, though not acutely, at the time of our examination. The abdominal muscles were extremely rigid and he was totally unable by any effort of the will to relax himself. As he was a strong, muscular man, this made the examination of the abdominal contents of practically no value. The only thing that was learned was that there was moderate tenderness at the normal position for the fundus of the gall bladder. In view of the recurrent nature of the attacks and their increasing severity, he was advised that an operation was probably wise, and should certainly be done if the pain continued.

After consideration, he decided to have the operation at once and it was accordingly done on Dec. 24, 1901. On opening the abdomen it was found that the gall bladder was long and rather lax. It projected beyond the edge of the liver and being attached to that organ up to the very edge, it made by its weight and downward pull a distinct sulcus in the lower edge of the liver. At first it was thought that the gall bladder was attached to the colon, but this was found not to be the case. The downward drag of the gall bladder was supplemented by the pressure downward and inward of the rigid abdominal wall and seemed to make a distinct bend about the middle of the gall bladder. It was decided to remove the gall bladder and this was done. The cystic duct was tied off and a gauze wick was introduced down to this point. The patient had considerable pain following the operation, but made a good recovery. I saw him March 14, three months after the operation, at which time he stated that he was entirely relieved of the pains that he had had, although there was a little sense of drawing in the scar.

The experience of these cases would lead me to prefer cholecystectomy as the better operation for the cure of such a condition as I have described While the attachment of the fundus of the gall bladder to the abdominal wall, in the first case, effaced the bend in its body and stopped the attacks of distinctly hepatic colic, it left a sense of dragging in the right hypochrondrium which prevented our regarding the operative result as a perfect one. The subsequent history of chronic appendicitis introduces a doubt as to the relation of the gall bladder to the attacks of pain. The disappearance after operation of the pains having distinctly the character of biliary colic, seemed reasonably convincing evidence that the gall bladder had been responsible for them. In the second case entire relief was afforded by the removal of the gall bladder. My experience in cholecystectomy leads me to regard this operation as having no more danger than a cholecystostomy when done in a case of ordinary difficulty. In these cases that I have been considering there were no deep nor extensive adhesions to make the removal of the gall bladder difficult.

SOME REMARKS ON CHRONIC SPHENOIDAL SINUSITIS.

BY ALBERT E. ROGERS, M.D., BOSTON.

FROM my study of the sphenoidal cavity, in the throat clinic of the out-patient department of the Massachusetts General Hospital, last summer, I came to the conclusion that a chronic sphenoidal sinusitis occurs much more frequently than is generally supposed. The cases which I have to report occured in the service of Dr. J. Payson Clark, to whom I am indebted for the privilege.

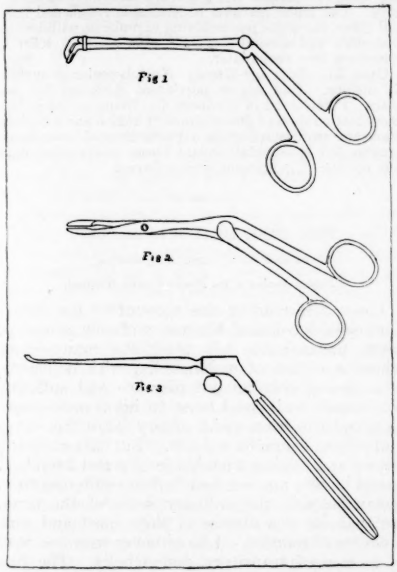
I found on examining 600 patients, that 29 were cases of accessory sinus disease, or nearly five (4.5-6) per cent of all who came to the throat department for treatment. Chiari and Lichtwitz report an average of only 2%. Of these 29 cases I found the antrum of Highmore affected four times; the frontal sinus once; a mixed frontal and ethmoid two times; the anterior ethmoidal three times; the posterior ethmoidal two times; the sphenoidal sinus sixteen times and a mixed posterior ethmoidal and sphenoid once. This places the empyema of the sphenoid at the head of the list, which does not agree with the majority of clinical observations in placing the maxillary sinus as the most commonly diseased. The great difference of opinion in regard to the frequency of sphenoidal disease is shown by the statement of Bosworth, that true primary disease of the sphenoidal cavity is very rare. He considers that affections of the ethomidal cells are the most common. He is supported by the observations of John Mackie, who reports forty-four cases of ethmoid to eight of sphenoid. In the records of the clinic at the hospital I have been unable to find the diagnosis of chronic sphenoidal sinusitis occurring a single time for the past five years. On the other hand, Lichtwitz states that next to the maxillary the sphenoidal is the most commonly affected. This statement is supported by Grünwald, who has opened 51 sphenoidal and found it necessary to operate on only 14 frontal. Hajek states that the sphenoidal is the most common of the posterior group of sinuses.

Before taking up the subject of diagnosis, it may be well to make a few remarks concerning the anatomy of the sphenoidal sinuses. They are located in the body of the sphenoid bone and are usually two in number, being separated by a delicate septum. Ordinarily the cavity is limited by the spheno-ethmoidal fissure. Its opening is in the anterior wall in the sphenoidal fissure, just above the upper turbinate. In the majority of cases the opening is in the middle part of the anterior wall, though sometmes it may be higher or lower. In most cases it is impossible to see the opening into the cavity, due to the obstruction of vision by the middle turbinate.

In examining a large number of fresh specimens prepared by Professor Zukerkandl while I was a student with Hajek in Vienna, I was struck with the extreme thinness of the upper and posterior wall of this cavity and its intimate relation with the sinus cavernosus. The inferior wall, on the other hand, is very thick. The size and shape of the cavity varies greatly in different individuals. One can never be sure how far backward it may go.

In making the diagnosis of sphenoidal disease I rely mainly on the probe. If pus is seen in the olfactory fissure it may be due either to trouble in

the sphenoidal sinus; the posterior ethmoidal cells; rarely the posterior part of the antrum of Highmore when a division exists therein; the frontal sinus; atrophy of mucous membrane, which I believe is sometimes primary, or to caries of the superior turbinate (as tubercular). Eliminate the last two and begin to investigate the cavities. I commence with the sphenoidal, as I think it the most commonly diseased and the easiest to enter. The probe must be passed in a direct continuation of the line from the inferior nasal spine to the middle part of the middle turbinate. *It must not go anterior to this line.* The distance from the inferior nasal spine to the anterior sphenoidal wall is 7½ cm. and never more. If the probe goes a greater distance one is either in the sphenoidal



sinus, brain cavity or naso-pharynx. If it goes over turbinate in the middle part, in the direct line I have mentioned, one is certainly in the sphenoidal cavity. I have verified this on more than a hundred specimens. The probe must be bent with a slight horizontal concavity (∪) in order to pass around the convexity of the middle turbinate. I also bend the tip very slightly downward, as it is easier to enter the cavity and there is less danger of injuring the posterior wall. Having entered the cavity and feeling roughened bone or the spongy granulation tissue, one is warranted in making a diagnosis of sphenoidal disease and justified in opening the cavity for the relief many obscure symptoms such as somnolency; of numbness of upper lip and general nervousness; cough; deafness; chills; vertigo; diffuse pain in head; pain in back of head; deep-seated pain back of eyes and another symptom not so obscure, namely, post-nasal discharge which, is too often treated as an ordinary "catarrh" by post-nasal applications.

In opening the sphenoidal cavity I proceed in the following manner: After thoroughly cocainizing the nose I remove a piece of the middle turbinate anteriorly, at its attachment to the outer wall, with a Knight's cutting forceps (Fig. 2). Then with the same forceps I grasp the body of the turbinate and bend it toward the outer wall, then by quickly twisting in the opposite direction fracture it along its attachment. The forceps, still grasping the bone, is now removed and usually the whole turbinate comes away, leaving a free and easy approach to the sphenoidal opening. The hemorrhage is generally brisk at this time, but it is not of long duration and further bleeding is exceptional. I do not use adrenalin solution at the time of the removal of the turbinate, but for after treatment I give the patient a spray of the 1-1000 solution, to use twice a day for ten days when I proceed to the opening of the sinus. This is done under cocaine with a forceps which I have constructed on the principle of Grünwald's downward-cutting forceps, but with shorter jaws, fenestrated, and with a stouter rivet at the joint. I have also had a strengthening clasp placed at the joint (Fig. 1). After the forceps has entered the nose its jaws are slightly opened and while paying attention to the upper jaw only the instrument is passed into the sphenoidal opening in the same manner as a probe. The jaws are then brought together with firm pressure biting out the anterior wall and establishing free drainage. In those cases in which the opening is too small to admit the forceps I first enlarge it by means of Hajek's sphenoidal hook (Fig. 3). Usually this is all that is necessary to obtain complete relief. In two cases only have I found it necessary to curette and syringe out the cavity.

This method has given complete relief in the eleven cases, the notes of which follow, and the more extensive operation by way of the antrum of Highmore, as recommended first by Jansen and later by Luc and Furet, has not been necessary in a single case.

CASE I. Man, age twenty-four. No tubercular or syphilitic history. For five years has had a constant dropping in pharynx. Had been under treatment for three years, receiving post-nasal applications and nasal douches. For a year complained of severe pain in back of head. Examination showed an hypertrophy of right middle turbinate. Pus in olfactory region and considerable pus in naso-pharynx. No atrophy of mucus membrane. Probe passed into sphenoidal cavity discovered roughened bone. Middle turbinate was removed under cocaine. Considerable hemorrhage, which soon subsided. Ten days later the anterior wall of sphenoidal cavity was removed, establishing free drainage. Three weeks later patient was entirely relieved of symptoms.

CASE II. Woman, age thirty-seven. No tubercular or syphilitic history. Always in good health. Nine years ago began to be troubled with nasal polypi. During the past eight years came to hospital four or five times to have the polypi removed. For five years has had a constant dropping in back of throat. Examination showed a moderate hypertrophy of right middle turbinate, remains of polypi and a slight post-nasal discharge. Probe revealed roughened bone in sphenoidal cavity. No disease in other sinuses. Polypi and middle turbinate were removed and two weeks

later the sphenoidal cavity was opened. The discharge continued for about five weeks, when it entirely ceased.

CASE III. Woman, age thirty-two. No tubercular or syphilitic history. Complained of severe diffuse headache, vertigo, specks before the eyes. For five years had been troubled with a, copious post-nasal discharge. She had been treated with nasal douches and post-nasal applications without relief. Examination showed an enlarged left middle turbinate and a great deal of muco-pus in the naso-pharynx and olfactory region. Probe showed roughened bone in sphenoidal cavity. Middle turbinate was removed and ten days later the anterior wall of sphenoidal cavity was removed. Three weeks later the headache and dizziness had disappeared. The discharge was greatly diminished, but as it still existed I curetted and syringed out the cavity. Two weeks later all discharge had ceased.

CASE IV. Woman, age thirty-nine. No tubercular or syphilitic history. For three years had been troubled with a copious post-nasal discharge. Had severe diffuse headaches and dizziness. For over a year had severe cough and frequent chills. Noises in left ear and hearing in same affected. Examination showed an enlarged left middle turbinate, polypi, and pus in olfactory region. Posteriorly there was to be seen a copious muco-purulent discharge. There was a chronic laryngitis. The probe revealed roughened bone in the left sphenoidal cavity. Polypi and middle turbinate on the left removed and two weeks later the cavity was opened. For two weeks more the discharge continued to flow freely, after which it began to diminish until six weeks after the cavity was opened it had practically disappeared. There was complete relief of all the other symptoms except the cough, which although diminished still persisted. This will undoubtedly cease as the laryngitis is secondary to the pharyngitis which was caused by the post-nasal discharge.

CASE V. Woman, age twenty-six. No tubercular or syphilitic history. Has had a continued dropping in throat for over a year, Complained of deep-seated pain in right side of head. Examination showed the right middle turbinate to be moderately enlarged. There was a very slight amount of muco-pus in the olfactory region. The probe revealed roughened bone in the sphenoidal cavity. The middle turbinate was removed and two weeks later the sphenoidal cavity was opened. When the anterior wall was removed considerable pus escaped. Three weeks after operation the discharge and pain had ceased.

CASE VI. Man, age forty-one. No tubercular or syphilitic history. For many years had been troubled with a post-nasal discharge. Three years ago had an attack of facial erysipelas. Complained of vertigo and deep-seated pain back of eyes. Examination showed no hypertrophy of turbinates and there was no discharge anteriorly. Posteriorly there was considerable muco-purulent discharge. The probe revealed roughened bone in both sphenoidal cavities. The middle turbinates were removed and both cavities opened, resulting in complete relief to the symptoms four weeks after operation.

CASE VII. Woman, age twenty-seven. No tubercular or syphilitic history. Two years ago had an attack of facial erysipelas. Had had a copious post-nasal discharge for two years. Complained of severe headache in top and back of head. Examination showed a very large middle turbinate on right side. No pus seen anteriorly. Posteriorly naso-pharynx filled with pus. Probe revealed a large area of roughened bone. The middle turbinate was removed and two weeks later the cavity was opened. The pain in head was relieved, but as three weeks later the pus continued, I curetted and syringed the cavity twice a week for two weeks, when the discharge ceased.

CASE VIII. Woman, age forty. No tubercular or syphilitic history. For four years had a copious post-nasal discharge. Complained of a diffuse pain through head, deep seated back of eyes. Examination showed polypi on both sides and enlargement of both middle turbinates. There was a great deal of muco-pus seen posteriorly. The probe showed spongy tissue in both sphenoidal cavities. Both turbinates were removed and the anterior wall of both sphenoidal sinuses taken away. Considerable polypoid tissue was curetted out of both cavities and after a few weeks' syringing the symptoms were entirely relieved.

CASE IX. Man, age twenty-five. No tubercular of syphilitic history. For two years complained of difficulty in breathing through right nostril. Had a deep seated pain back of eyes. Complained of being dizzy at times. Upon examination the right middle turbinate was found greatly enlarged. No pus to be seen either anteriorly or posteriorly. The probe found roughened bone in the right sphenoidal cavity. No other sinuses were found affected. A fine pointed catheter was next passed into sphenoidal cavity and a small amount of muco-pus was syringed out, thus confirming the diagnosis. The middle turbinate was removed and one week later the anterior wall of sphenoidal cavity was taken away. The symptoms were entirely relieved.

CASE X. Man, age forty. No syphilitic or tubercular history. Was being treated in the nerve department for neurasthenia and was referred to throat department for examination of nose. He complained of a pain in back of head; a numbness of upper lip and was generally very nervous. Examination showed a moderate enlargement of left middle turbinate. No pus either anteriorly or posteriorly. The probe revealed considerable roughened bone and there was some pus adhering to probe on withdrawal. Operation was advised and done, with complete relief to symptoms five weeks later.

CASE XI. Boy, age fifteen. No tubercular or syphilitic history. Had severe post-nasal discharge for two years. Complained of dizziness and frequent headaches. Examination showed pus in olfactory region and a copious discharge in naso-pharynx. Probe showed roughened bone in left sphenoidal sinus. Three weeks after sinus was opened all symptoms were relieved.

THE CASE OF LOUIS BITZER.[1]

BY EDWARD B. LANE, M.D., BOSTON,

Superintendent of the Boston Insane Hospital.

UPON first reading the account of the Bitzer homicides I believed his was probably a case of acute melancholia. It read like many cases where a victim of melancholia, with delusions, who, seeing nothing but disgrace and suffering for himself and loved ones, in his frantic desire to save them from awful misery takes their lives and then commits suicide. But after seeing Bitzer and talking with his family and friends, I found he was not nor had he been suffering from melancholia in the ordinary sense of the term. Melancholia is a disease of slow onset and runs a course of months. I have never seen nor read of a case of transitory melancholia. The line of reasoning in the writing is strikingly similar to that of a homicidal melancholiac. And here the similarity ends.

Transitory frenzy is described and after much debate upon the subject is, I think, now admitted as a rare form of mental disturbance. In transitory frenzy there is evidence of cerebral congestion, flushed face, congested eyes, furious excitement followed by a deep, profound sleep. During this excitement the victim runs amuck and may commit violent and unprovoked assaults upon any one he chances to meet. This case was clearly not one of transitory frenzy. There was no evidence of great physical excitement; the shooting of his family was deliberate and planned and intended suicide was confessed. There was no deep sleep. But in this case we still have to face the fact that a fond husband and a loving

[1] Read at the annual meeting of the Massachusetts Medico-Legal Society, June 9, 1903

father attempted suddenly to annihilate his family, and the ordinary man is inclined to use his common sense and say, such a person must have been insane. Such a horrible, unnatural act is of itself evidence of an abnormal state.

To the medical man Bitzer did not appear insane at the time of his examination, in February, nor was there any evidence that he had previously suffered from any of the ordinary forms of insanity as observed in our hospitals for insane. The serious question arises, What was the explanation of this terrible deed? and was he responsible for it?

Then follow the very practical questions, What shall be done with him? How shall the law be enforced and society protected? Unfortunately, laws cannot be so framed as to meet all individual cases and deal equitably with each one.

To find an answer to the medical question in this case, I made a careful study of Bitzer, personally, and inquired into his history. The case was much simplified for all by the unusual document which he wrote immediately after the shooting of Ida. In this his state of mind is revealed and his intentions disclosed.

Upon examination by four physicians (Drs. Quinby, Houston, Scribner and myself), all familiar with the insane, we agreed that Bitzer impressed us as a man " not quite up to par mentally." He was poorly nourished, weak and emotional. He was born in Germany, and no trace of mental or nervous disease was discovered in the family. He is said to have had a prolonged and exhaustive illness when a small child. His habits as to intoxicating drinks were very temperate, judged from the standard of his nationality. He drank a little ale or beer daily. Used spirits rarely. Did not drink while at work and was never drunk. He was liable to lose his self-control under slight provocation. It is related at one time that he was holding an auction when some one remarked that he must be about to fail in business or he would not hold an auction sale. He lost his self-control and smashed his hat and a piece of furniture near him. He admits this fact, but says he does not remember all the incident.

From childhood he walked in his sleep. His wife tells of repeated incidents of his sleep-walking. She would find him asleep on the floor in another room from that in which he had gone to bed. When anxious about his store, thinking of fire or burglars, he has been known to leave his bed and go to the store and in the morning have no recollection of it. One night his wife missed him from their bed and got up to look for him. She found him lying in a ludicrous position in the child's cradle with his head and legs hanging over either end. Only four nights before the tragedy she missed him and found him walking about another room. and had she not caught hold of him he would have walked out of the window.

His brother was a somnambulist as a boy. Two of his most intimate friends describe him two weeks before the tragedy as peculiar and " morose." He failed to greet them in his accustomed manner when they entered his store; he answered them in monosyllables and appeared nervous and his hands were trembling. At other times he was as usual. Bitzer failed to recall these incidents when I questioned him about them later.

Six years ago, when recovering from the grip, he became very excited and tried to bang his head against the wall. It took two or three men to prevent him from injuring himself. They believed he was attempting suicide. He went to sleep after this temporary frenzy. He states that he knows nothing of this and that he never heard of it until questioned about it months after his arrest.

His account of the shooting was substantially this:

" Ida asked me to put away two revolvers. I closed one quick and it went off and Ida fell on the floor on her back. I did not examine her to see if she were dead. I did not touch her. I first thought of running away, as I was afraid of being arrested, and I took the money out of the drawer. I then thought of doing away with myself. I thought of going to the girl's home. Then I wanted to see my people before I died. I remember going to get a paper and kneeling at the table to write. The last thing I remember was putting on my hat and coat, which I did before I wrote. At the house I remember my wife's arm pulling at my neck and hearing her say something about shooting. I remember the officer at the lockup saying my boy was shot, when I got the same feeling I did when the girl was shot. I remember I came to the Greenfield jail in a sleigh. I came to myself here in the jail the next morning."

His wife says that when he entered the house he looked like a crazy man. His appearance was so unnatural, she asked him what was the matter. He made no reply, but went out into the kitchen.

Assuming that Bitzer's account of the shooting is true and that it is also true that he does not remember anything after the shooting of Ida, save the few incidents related, we must conclude that he was not in a normal state at the time of shooting the family. The coherent statement he wrote, his finding his way home and selecting his family in order are against the idea of his suffering from ordinary delirium. Nor is there any evidence that he was an epileptic. But he was subject to periods where there was a divided or dissociated consciousness. As is well known, this condition is not rare in epileptics and hysterics, and is identical with the hypnotic state. It is not uncommon for such a condition to succeed a mental shock. It usually lasts for hours, but may endure for months or even years.

In this condition it is not uncommon for there to be islands of memory; that is, there will be a memory more or less distinct of certain incidents, as in this case: Bitzer remembered feeling

his wife's arm about his neck and hearing her voice as in a dream and of feeling the cold steel of the handcuffs as they were put on his wrists by the arresting officer. Very important is the circumstantial evidence in this case that Bitzer was a somnambulist. That is to say, it was well recognized that he was frequently subject to disturbances of consciousness. The somnambulism was frequent from childhood. The periods at the store when he appeared preoccupied and failed to greet his friends in his usual manner and answered in monosyllables, and his denial of such occurrences, may possibly be explained in a similar way.

No one would think of holding one who had committed a crime during delirium or while dreaming, responsible. Yet, strictly speaking, is either the result of insanity? The defence of hypnotic influence has been set up in one or two cases. But there was grave doubt as to the criminal being in that state, but if we were satisfied that a crime was committed when the criminal was in a hypnotic condition it is certain the popular verdict would be for acquittal.

What then shall be said of the responsibility of Bitzer if he was in a state of divided consciousness and impelled by the horrible fears of a disgrace while in a condition of partial consciousness, as shown by his peculiar expression and no memory of the horrible and unusually exciting events? It has been found that in the half-waking or hypnagogic state people are particularly susceptible to depressing emotions. Depression tends to continue the hypnagogic state (which is practically identical with the hypnotic condition), and a case is told of a young man who was slow in waking and his sister, to arouse him, told him that his oldest sister had died suddenly and he must get up. Instead of awakening, he began to sob convulsively and finally alarmed his sister so that she called the oldest sister, who tried to reassure him by showing herself alive and well. It was of no avail and he had a series of convulsions and it was several days before he recovered his normal condition.

I believe that Louis Bitzer was profoundly shocked by the discovery that he had killed his clerk. As a result of that shock he at once passed into an abnormal mental state of partial consciousness, analogous to the post-epileptic, somnambulistic, hypnotic and hypnagogic states, where his judgment was largely suspended, his actions were automatic and the result of profoundly depressing emotions of fear and shame. Reflection and will power were largely in abeyance. He was an automaton and as is to be expected, he has no memory of the events. He is as irresponsible for them as if he had committed these crimes during sleep.

I do not believe it at all probable that he would again be guilty of a similar crime. It is probable that if he were hypnotized he would be able to recall the events that took place in his home. It is understood that I believe he was in a normal condition and responsible when he shot his clerk.

A BRAIN HARDENED BY KAISERLING'S METHOD SHOWING THE TRACK OF A BULLET.[1]

BY WM. F. WHITNEY, M.D., BOSTON,

Curator Warren Anatomical Museum, Harvard Medical School.

I WISH to call attention to a brain preserved by Kaiserling's method, which I think should always be adopted in the case of any injury, as it is the only one by which the seat and extent of the lesion can be accurately determined. The delay incident to this method of preparation would be rarely any obstacle in the course of a legal inquiry. The following case of suicide is an illustrative one:

A man who had been drinking hard fired two shots from a 32-caliber revolver at himself at 10.35 A. M. He was brought to the hospital at 11.07 A. M., and in the right frontal region were two ragged wounds, each one inch in length with powder-stained edges, one lying on either side of the temporal ridge. About one inch towards the median line from wound nearest median line, a bullet could be felt lying subcutaneously, which was easily removed and no bony injury felt. Through the other wound a round hole could be felt in the skull. There was considerable hemorrhage, pupils normal in size, equal and reacted. No bleeding from ears or nose. Heart, lungs and abdomen negative. Patella reflexes were equally exaggerated, superficial reflexes absent. He moved his arms and legs about freely, apparently with equal strength and required restraint. Pulse 140, irregular, temperature 97.8 in axilla. Half an hour after admission the patient had a clonic convulsion which lasted about one minute and affected both sides of the face and extremities equally.

At 12.30 P. M. noticed that he did not move right extremities while the left were moved about freely. Right knee jerks more active than the left.

At 1.30 P. M. the left pupil was larger than the right and there was slight exophthalmos of the left eye. Increasing coma.

At 2 P. M. deep coma, but on painful stimulation there was slight motion of both arms, and the right extremities were flaccid. Pupils and other reflexes as before noticed. Pulse 128.

At 3 P. M. trephine opening made by the surgeon in charge, on left side, 1.5 inches behind and 1.5 inches above external condyloid process. Posterior branch of middle meningeal artery exposed and seemed to be formed by two small branches which formed a main branch at about the middle of trephine opening. Dura bulged, with a bluish tinge, no pulsation, arteries tied and dura opened. A dark blood clot escaped, followed by fresh blood and disintegrated brain. No trace of bullet seen. Hemorrhage rather profuse, direction not determined. Pulsation of brain returned after relieving pressure, but he never regained consciousness. Respiration stertorous. Pulse continued to fail, and died at 6.45 A. M.

[1] Read at the annual meeting of the Massachusetts Medico-Legal Society, June 9, 1903.

Brain. Was hardened in bulk in Kaiserling's fluid [2] for about two months. It was then cut in a series of sections each 1.5 cms. thick and the track of the bullet located as follows:

It entered at about 4 cms. from the front of the right anterior lobe, passed directly across, traversing both lobes. In the left one was a cavity the size of the end of the thumb, filled with blood clot and disintegrated brain substance. This opened upon the surface at the point where the trephine wound had been made. From this cavity the track turned almost at right angles and proceeded directly backwards, passing through the white substance of the left hemisphere and along the upper part of the convolutions of the island of Reil, in the middle part of which it was found to be lodged.

The case is interesting in the different courses which the two bullets followed. Either there must have been a great difference in the charges of powder, or the skull must have been very much harder or denser at the point where one struck than the other. Moreover, the one that penetrated the skull must have struck the opposite side, rebounded, turned around and destroyed the brain substance extensively at that point. It then went in a direction at nearly a right angle to that in which it was originally fired, and finally lodged at about the middle of the hemisphere.

In concluding I wish to express my thanks to Dr. Bottomley for his kind permission to use the clinical notes of this case, and to Medical Examiner Harris for the opportunity of obtaining the specimen, which is preserved at the Warren Anatomical Museum at the Harvard Medical School.

WHAT WAS THE CAUSE OF DEATH? [1]

BY A. ELLIOTT PAINE, M.D., BROCKTON, MASS.,

Medical Examiner, Brockton.

On the morning of Jan. 3, 1903, I was notified of the death of Mrs. S., aged thirty-nine, whose death was supposed to have been caused by poison.

The autopsy showed a well-nourished female, who weighed about 130 pounds. All the organs of the body were normal except the stomach, which contained one quart of grayish fluid. The mucous membrane on its posterior surface was somewhat congested in an area of 2 by 3 inches.

[2] KAISERLING'S METHOD FOR THE PRESERVATION OF SPECIMENS WITH THEIR NATURAL COLORS.

Slices of organs from 3–5 cms. thick are placed from 3–5 days in

1. Formaline	200 c. c.
Aq.	1,000 c. c.
Nitrate of Potash	15 grm.
Acetate of Potash	30 grm.

They are then removed, the fluid allowed to drain off and placed in

2. Alcohol 80% for 6 hours, then
Alcohol 95% for 2 hours

From this directly into

3. Aq.	2,000
Acetate of Potash	200
Glycerine	400

for permanent preservation in a dark place.

Further details for the preservation of whole organs, etc., should be studied in the original article.

[1] Read at the annual meeting of the Massachusetts Medico-Legal Society, June 9, 1903.

The stomach, one pint of its contents and sections of the liver, kidney and brain were sent to Prof. E. S. Wood for further examination.

Investigation showed that Mrs. S. had been divorced for two years, and had been given the custody of her children, a girl aged thirteen and a boy aged nine, together with $10 per month as alimony.

In September, 1902, while living in Whitman, her daughter became ill. The mother reported at that time and later that her child was being poisoned by its father, and that the child was under the influence of some woman. The father visited the child and consulted a clairvoyant, from whom he obtained two bottles of medicine, part of which was given to the child.

A physician who attended her found no evidence of the administration of poison. She was, however, extremely nervous.

The mother said that she found a white powder scattered upon the bed, floor and window sill in the child's room.

She told the child and others of her powers as a medium, and that she could tell the future and know what was being done by others, etc.

In November she and her children moved to Brockton, taking the rooms in which she died. Soon after going to Brockton Mrs. S. mixed the child's medicine and took them to the chemist of the Board of Health for examination. He did not tell her, but after her death, he informed me that the medicine contained a large amount of arsenic.

Some three weeks before she died, Mrs. S. was found in bed with a man. They were immediately arrested. He pleaded guilty and paid his fine. She appealed her case.

On Dec. 29 she and the children drank cocoa with their breakfast. In the afternoon she went to Whitman, refusing the company of her landlady, who offered to accompany her. At 5 P. M. she returned, complained of being very sick and distressed and was helped to her room and put to bed. She was nauseated. A physician attended her until Jan. 1. She said that her husband had poisoned her, repeating this statement to a lawyer who had been called to make her will, also saying that she would live but a short time. The lawyer advised her to call Dr. B. Dr. B. found her very nervous, but did not believe that she had been poisoned and made a favorable prognosis. On his next visit, however, the following day, she was vomiting and had burning pains in the stomach and intestines, a dry skin, an excited pulse and was passing only a very small quantity of urine.

He then accused her of taking poison. This she denied and said that she did not want to die. After considerable resistance she allowed him to pass a stomach tube. The stomach was washed out and its contents examined.

Her urine was drawn; it was scanty and highly colored. She grew rapidly worse, and at midnight her ante-mortem statement was taken. She said, realizing that she was dying, that her husband had poisoned her, and that she had

taken no poison by her own free will. She died at 3 A. M.

A legal investigation followed.

The contents of her stomach from the washing, with the stomach tube, and the cocoa and milk found in her room, were examined for poison with negative results.

Witnesses testified that, in September, 1902, at the time her daughter was ill, she had purchased an ounce of arsenic. The daughter said that she saw the powder in her room in Whitman on the bed, floor and window sill; that her mother put a teaspoonful of the powder in the medicine which had been examined by the Board of Health; that she knew her mother was poisoned with arsenic and told her so, and that she persuaded her mother in consequence to join the church, which she did, about ten days before her death. The child is old for her years.

Another witness testified that Mrs. S. had on two occasions attempted suicide by jumping into a cistern. On each occasion she regretted her act, hollered for help and was fished out. Early on one morning, while her husband was away, she, in her night clothes, ran toward the river, saying that she would drown herself. A friend took her home. She begged of him that he should not inform her husband.

Several testified that for two years she had been saying that she and her children were being poisoned by her husband.

It was proved that Mr. S. had not seen her for several months and there had been no opportunity for him to give her any poison.

She did go to Whitman on the trip mentioned, where she drew some money on a check.

On her way home she called on a lawyer and paid him a retainer to defend her case. He assured her that she would only be fined if found guilty.

Prof. E. S. Wood examined the specimens sent him for poisons, with negative results.

The return of death was "Cause unknown."

This woman purchased arsenic, put arsenic in the medicine, had a chemist examine it, told her friends that she and her children were being poisoned, was taken sick, sent for priest and lawyer, told them she was poisoned and was going to die, and did die.

She had burning pains in the stomach and intestines, vomited, had retention of urine, a dry skin, pulse quick and weak, face showing distress, etc. What could have done it?

The case has been of interest to all who were brought in contact with it and now I want to know, what was the cause of death?

New Instrument.

A NEW FRAME FOR THE TREATMENT OF FRACTURES OF THE LOWER EXTREMITIES.

BY JOHN H. CUNNINGHAM, JR., M.D., BOSTON.

THIS fracture frame which has been in use especially on the services of Dr. Abner Post and Dr. Fran-

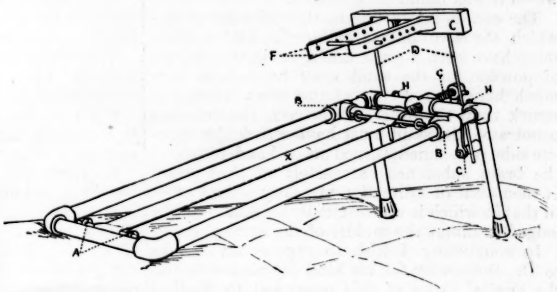


FIG. 1.

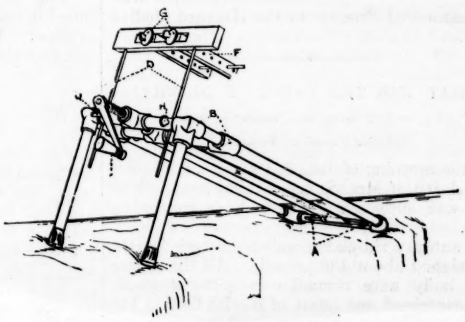


FIG. 2

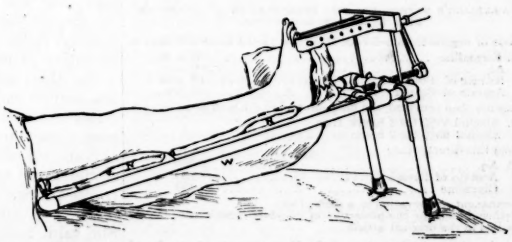


FIG. 3.

cis S. Watson, at the Boston City Hospital, was designed for fractures of the leg, both upper and lower, which because of their nature were difficult to hold in a corrected position during the application and setting of a plaster cast.

It was the writer's desire to make it a mechanical device to maintain the fractured bones in a corrected position by preventing posterior bowing, inversion or eversion, to keep the foot at right angles with the leg, and to allow of an easy and accurate method of approximating the ends of the fragments and of holding them by means of a plaster of Paris cast.

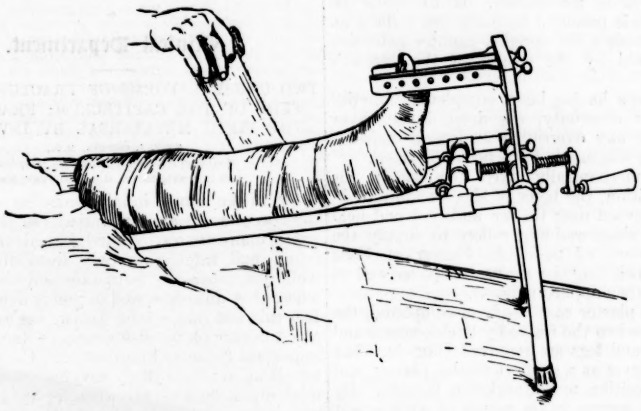


Fig. 4.

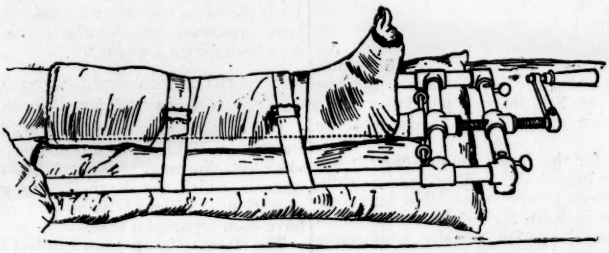


Fig. 5.

The apparatus (Figs. 1 and 2) consists of a pipe frame 40 by 14 inches, with two detachable legs 13 inches high which are screwed into one end. This frame serves as a support for a strip of canvas about 3 inches wide and 30 inches long (X, Figs. 1 and 2). The canvas is made with a loop at either end, large enough to admit a ½-inch brass rod. The lower rod is held in position by 2 screw-eyes in the lower end of the frame (AA, Figs. 1 and 2). The upper one is held in position by 2 screw-eyes placed in a piece of piping which plays back and forth over the long arms of the frame for a distance of 6 inches by means of a thread-screw and crank (BB, Figs. 1 and 2). By the latter two devices the canvas strip is drawn sufficiently tight to prevent sagging by the weight of the leg.

The upright at the end of the frame consists of two ¼-inch brass rods 11 inches long fastened into a piece of oak (DDD, Figs. 1 and 2). This piece of wood has a slit 8 inches by 1 inch into which there are fitted two wooden braces perforated by ¼-inch holes at corresponding points (FF, Figs. 1 and 2). The braces slide sidewise and may be fixed at the desired point by thumb-screws (GG, Fig. 2). The two brass rods (DD, Figs. 1 and 2) play up and down through two holes in the upper end of the frame, and may be held by two thumb-screws at the desired level (HH, Figs. 1 and 2).

The canvas strip having been drawn tight, giving a firm, straight surface to work on, it is covered with two or three layers of sheet-wadding long enough to fold up over the sole of the foot (W, Fig. 3). The leg is placed upon it and the normal curve at the ankle and in the popliteal

space is padded (N, Fig. 3). Any anterior or posterior bowing may now be corrected by placing pads at the proper points. The upright is then raised to such a level that a round piece of wood placed through corresponding holes in the braces will be at the upper part of the ball of the foot. This round of wood is placed in that hole which will bring the foot at right angles with the leg. The braces are now brought in contact with the foot, one from either side, and the foot turned to right or left as the case may be, thus correcting any inversion or eversion and giving the proper alignment of the big toe, inner side of patella and anterior-superior spine of the ilium. By setting the thumb-screws the proper relation of these points is maintained. If extension be necessary it is procured by some one pulling on the foot through the upright, counter extension being secured by the weight of the patient's body.

These steps having been completed, anterior or posterior deformity, toe drop, inversion or eversion, or any overriding or lateral displacement of the fragments have been corrected.

Having mechanically fixed the leg in the desired position, the layer of sheet-wadding (W, Fig. 3) is turned over the leg and foot and held by enough sheet-wadding rollers to supply the proper amount of padding. Plaster of Paris bandages, including the canvas strip, as well as the leg, are then applied (Fig. 4).

After the plaster cast has been completed, the leg is strapped to the frame by buckle-straps and its upright and legs are removed (Fig. 5). The frame then acts as a support to the plaster and is left in position until the latter is hard. By cutting the canvas in its points of attachment to the frame, it is removed and the canvas strap drawn out of the cast.

Besides being useful in the more difficult simple and comminuted fractures, the apparatus has been especially servicable in those which are compound, requiring operation. By its means, fractures that otherwise would have had to be wired have been held in good position without the introduction of a foreign body into the bone.

When used for this latter class of cases it has secured better immediate position; and as sufficient wadding can be applied to allow for subsequent swelling without fear of losing the alignment of the leg, the patient remains comfortable without the plaster being split.

The dressing of a wound is rendered more easy, as the cast is really a fracture-box, from which the dressing can be taken and replaced without disturbing the leg; while the ordinary plaster cast follows the contour of the leg too closely to make this procedure an easy one.

In the treatment of fractured femurs by extension, good results have been attained by incorporating the leg in plaster by the use of this apparatus. In this class of cases special attention is paid to supplying considerable padding over the dorsum of the foot and above the condyles, and to applying the plaster so as to cause the extension to be made from these two points. The extension straps are incorporated in the plaster cast, and therefore the disagreeable feature of adhesive strips applied to the skin for extension is overcome. This method of applying extension has been the most comfortable for the patient and the easiest and most accurate for the surgeon.

Another feature of the frame is that but one person is required to apply a plaster accurately in the majority of cases, thus dispensing with the necessity of holding the leg, which has always been a disagreeable and often unsatisfactory part of the treatment of fractures of the lower leg by plaster-of-Paris casts.

Clinical Department.

TWO UNUSUAL FORMS OF FRACTURE — FRACTURE OF THE CAPITELLUM; FRACTURE OF THE FIFTH METATARSAL BY INVERSION.

BY F. J. COTTON, M.D.,
Assistant Surgeon, Boston City Hospital,
AND C. P. SYLVESTER, M.D., ROXBURY, MASS.

Of all the almost infinite varieties of fractures that occur some are but variants of the common types, many are obvious and typical enough when found and interesting only from their rarity, while yet others are both rare and obscure even where they do correspond to pretty definite types. It is this last class — the class we are especially liable to overlook or misinterpret — that it is really important for us to know about. Common types we all know; the utterly atypical cases we must work out as best we can when we meet them, but in other cases it may be only the knowledge of the occasional occurrence of a lesion that makes it possible for us to recognize it when it does occur. Both the cases here recorded belong to this class; both presented lesions which the writers had long been on the lookout for.

FRACTURE OF THE CAPITELLUM.
(Fractura rotuli humeri partialis.)

Hahn,[1] a number of years ago, described this fracture on the basis of a post mortem on a case observed clinically. Kocher[2] has recorded five cases in which the diagnosis was confirmed by operation. Wright,[3] Steinthal[4] and Stimson[5] have each reported a case.

The fracture in all cases consists of a splitting off of the anterior articular surface of the external condyle — the face with which the head of the radius articulates — described as the capitellum (or capitulum) humeri. The fracture thus involves but a portion of the total mass of the external condyle. The fragment has no firm attachments and hence lies practically free in the joint. For this reason the displacement may be forward or backward; for this reason also there

[1] Hahn: Deutsche Chirurgie, Billroth and Lucke, Lief 63a, 1886, p. 728.
[2] Kocher: Praktisch wichtige Fracturformen. Mitth. a. d. klin. u. med. Inst. d. Schweiz, Heft 10-12, ref. in Cbl. f. Chir., 1896, 545.
[3] Steinthal: Cbl. f. Chir., 1898, xxv, p. 17.
[4] Stimson: Fractures and Dislocations, 3d Ed., p. 256.
[5] Wright: Guy's Hosp. Rep., 1879, iii, s. xxiv, p. 51.

is practically no chance of firm union of the fragment with the shaft of the humerus.

Wright's case and one of Kocher's were in children (twelve and fourteen years), all others were in adults ranging up to over sixty years of age. The cause seems to be direct trauma.

CASE I. Mrs. P., aged forty. Jan. 24, 1902, fell down six steps and struck on the left elbow. Two days later she went to the hospital. The elbow was by this time much swollen and discolored. No definite diagnosis seems to have been made, but the arm was put up in an "internal angular" splint and the patient told to return for massage. This she did not do, but shortly began to use the arm. The appended X-ray was taken within a month of the injury.

She was first seen by the writers six months later. At this time she was able to use the arm moderately, but had a good deal of pain after use, especially at night.

The general outline of the arm was normal, but there was slight general thickening about the elbow, and notably just in front of the external condyle. At this point an abnormal, hard, moderately movable mass was to be felt. Extension at the elbow was checked at 40° beyond the right angle; flexion was possible to a right angle only. Pronation and supination were much limited: and rotation, especially in supination, brought out a very definite, rather soft crepitus at about the point where the loose fragment seemed to be. It was obvious that there was a loose fragment in the joint and the diagnosis was made on the clinical evidence alone.



FIG. 1.

X shows loose fragment in front of the external condyle.
Y shows, apparently, the gap from which the fragment came.

The X-ray previously taken was obtained and showed (Fig. 1) a joint substantially normal except for the presence of a loose fragment (X). This fragment, flat on one side, shows on the other an even curve, which can only be from an articular surface. There is no articular surface here save the capitellum which can give such a curve; moreover, there seems to be at (Y) a defect in the articular face of the external condyle roughly corresponding to this fragment. Evidently this is then a case of Kocher's "fractura rotuli humeri partialis," a splitting off of the face of the capitellum, leaving a fragment which has not been united and which (in combination with the small callus masses) greatly interferes with norma lmotion and use of the joint. The patient was advised to have the fragment removed, but declined any operation, disappeared and has not returned.

In all the recorded cases there has been failure of bony union; and interference with function varying[6] according to whether the fragment is as here anterior to the joint or has, as in three of Kocher's cases, slipped into the capsular space between radius and olecranon behind.

The operations done to date have been very successful; there is no tendency to restoration of full function by palliative treatment. It is evident that these cases (given the diagnosis and the patient's permission) should be operated on whenever they occur. The symptoms may be generalized as follows:

Limitation of joint motion following trauma (limitation of extension and supination especially).

No displacement of any of the landmarks.

Crepitus on motion.

Local thickening and a more or less palpable fragment of relatively small size, either above and in front of the external condyle or below and behind.

The skiagraph may help, as in the case presented, by showing a curved articular surface that could only come from the capitellum.

FRACTURE OF THE FIFTH METATARSAL BY INVERSION OF THE FOOT,

In the *Annals of Surgery* for 1902, Vol. XXXV, p. 697, Robert Jones of Liverpool reported a half dozen cases of fracture of the fifth metatarsal bone apparently caused by so turning the ankle as to bring the weight to bear suddenly on the outer edge of the foot. This was a new cause for such fracture. We present here a like case:

CASE II. Mrs. N. M., age forty-five. Was dancing in very thin-soled and rather worn shoes. Came down with



FIG. 2.

Oblique fracture of fifth metatarsal, from inversion of the foot.

[6] In Hahn's case there was forward displacement with limited flexion and extension but with pretty free rotation. Three of Kocher's cases, however, showed the backward displacement with marked interference with rotation. Steinthal's case showed "extension to 150 degrees, flexion to 135, pro and supination present with crepitus."

her weight on the outer side of the right foot with the heel raised; felt something give way; stopped dancing and went home, not without some difficulty, but unassisted. The foot became swollen and painful and discolored on the outer side, but she managed to do her housework, and only after a week did she appear at the City Hospital Outpatient Department, where we saw her Oct. 31, 1902.

There was moderate swelling of the right foot, localized over the fifth metatarsal. There was sharp pain when she bore her weight on the ball of the foot. There was no obvious deformity, but on manipulation distinct crepitus was obtained.

The X-ray herewith reproduced shows an oblique fracture of the fifth metatarsal with some displacement.

A pad was applied to the dorsal surface and a padded plantar splint to the sole of the foot. She did not reappear for treatment, but was looked up on Nov. 28, 1902. There was then firm union with slight callus. No palpable deformity. The usefulness of the foot was already substantially normal.

Save for the obliquity of the fracture line this is the exact counterpart of Jones' cases — the causation by weight bearing on the inverted foot is in this case beyond question. The probability is, as Jones suggested, that this fracture is not very rare; how easily it may be passed over as a sprained foot is evident from the history given in this case.

Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

PROCEEDINGS OF THE THIRTY-FIRST ANNUAL MEETING, HELD AT WASHINGTON, D. C., Oct. 26, 27, 28, 29 AND 30, 1903.

THE Association met in the Assembly Hall of the New Willard Hotel under the presidency of DR. WALTER WYMAN, Surgeon-General of Public Health and Marine Hospital Service, Washington, D. C.

OPENING ADDRESS.

This was delivered by GEN. GEORGE M. STERNBERG.

He spoke briefly of the Association as an important factor in promoting the welfare of the people of the United States, not only from a sanitary point of view, but also in the way of national prosperity. He called attention to the epidemic of 1878, which caused a loss of $15,000,000 to New Orleans alone, and more than $100,000,000 to the entire section invaded. Having now an exact knowledge of the method by which yellow fever was transmitted, its prevention had become comparatively easy, and sanitarians had no longer any fear of the recurrence of extreme epidemic of the disease within the limits of the United States. In Washington there was still much to be accomplished in the way of sanitary improvements, the necessity for which was generally recognized. The sewer system was incomplete and in the alleys of the city there were many houses which had no sewer connections and no water supply except from a street hydrant. These alley houses, occupied principally by the more ignorant class of the colored population, were usually overcrowded and were the hot-beds of vice, immorality and disease. The high death rate from typhoid fever, tuberculosis and diphtheria and the excessive infant mortality among this class of the population gave to the nation's capital a mortality rate which did not compare favorably with that of many other cities in this country or of the great capitals of Europe. A law for the condemnation of unsanitary houses was urgently needed. The sewer system should be pushed to completion and the health department should have the authority and the money necessary for the sanitary reclamation of these plague spots which disgraced our otherwise beautiful and healthful city.

REPORT OF THE COMMITTEE ON CAR SANITATION.

This report was read by the Chairman, Dr. GRANVILLE P. CONN of Concord, N. H. While the committee was not prepared to suggest reform which would at once settle the much vexed question, yet it was believed progress was being made, and the managers of railroads were coming more nearly in accord with public opinion, and that the problem was gradually being solved. The house on wheels not only had the atmospheric influences which at all times surrounded the dwelling, but at different rates of speed this pressure was immensely greater than that upon the ordinary domicile. One should always consider the character of the occupants, who, for the time being, were tenants and had but little or no thought of the sanitation or well being of those who might be the next passengers to occupy the same seats, and who, perhaps, had little or no appreciation of what an expert in sanitation would consider a healthy condition of personal cleanliness or of a habitation. The more permanent the means and methods adopted by health authorities, the more satisfactory they would prove to the commercial world and the general manager.

TRANSPORTATION OF PERSONS SICK WITH TRANSMISSIBLE DISEASES.

DR. J. H. HURTY, Indianapolis, Ind., read a paper with this title. Among other things, the author stated that leprosy was not so easily transmitted as tuberculosis and compared with the latter malady in its destructiveness to human life it amounts to nothing at all; yet the mere mention of the word "leprosy!" caused a shudder, and a riot would result if an attempt was made to introduce a leper into a railway car. Influenza, also a transmissible and very destructive malady, killed a thousand where leprosy killed one, still people did not fear it sufficiently to take even ordinary precautions against it. The public welfare could in no degree or manner be advanced through risking the increase of transmissible diseases. All intelligent observers could clearly see the possible harm which might attend the transportation in railway trains of cases of smallpox, yellow fever, bubonic plague, diphtheria, scarlet fever and leprosy, and in consequence

public opinion would not tolerate such a thing. An equal understanding in regard to pulmonary tuberculosis, influenza and typhoid fever would develop a public opinion, demanding patients having these diseases, that rational regulations intended to prevent transmission must be rigidly enforced. Special compartments for persons sick with communicable diseases were impracticable.

CAR SANITATION IN THE REPUBLIC OF MEXICO.

DR. JUAN BRENA of Zacatecas said it was a well-known fact that the infectious germs of diseases were floating in the air and were by it deposited in the veneers, mouldings and ornaments of furniture, and thence again taken up by the air and inhaled with it, and for that reason writers on hygiene and sanitary authorities had again and again recommended simplicity of ornamentation, hardness of materials and polished surfaces for the interior of cars. He referred to the construction of railway cars, the methods of cleaning them, the drinking water, water closet, and ventilation.

The suggestions and observations made by scientific writers had been neglected and very little or no attention paid to them up to date, and thus the grave defects were still existing. These obstacles, however, should not dishearten sanitarians, but they should incite them to preach and work with the tenacity of the water drop which falls upon a hard stone.

REPORT OF THE COMMITTEE ON ANIMAL DISEASES AND FOOD.

DR. D. E. SALMON of Washington, D. C., Chairman, presented the report of this committee. He said the experiments and comparative studies of Theobald Smith had attracted special attention to the difference in virulence shown by tubercle bacilli from human and bovine sources when inoculated upon cattle. Smith also pointed out certain morphological and cultural differences in bacilli from these two sources, and in the location and histology of the lesions in cattle produced by such bacilli. He did not conclude, however, that bovine bacilli could not produce disease in the human subject, but said that bovine tuberculosis might be transmitted to children when the body was overpowered by large numbers of bacilli, as in udder tuberculosis, or when certain unfavorable conditions existed. He adduced evidence that four human cultures caused generalized tuberculosis in cattle; but Kossel suggested that it might be possible that the bacilli in cases of human tuberculosis under certain circumstances could likewise attain a very high pathogenic activity for cattle without their being for that reason bovine bacilli.

Of 39 cases of human tuberculosis tested, 4, or over 10%, were virulent for cattle, and would be classified as of bovine origin; but these 4 cases were all found among the 16 cases of tuberculosis in children which the German Commission investigated; hence it was plain that 25% of the cases tested of tuberculosis in children by Koch's method would be classified as of bovine origin.

While the Committee agreed that it was advisable to scrutinize clinical evidence as carefully as possible before it was accepted as influencing the decision of such an important question, consistency demanded that one should accept clinical evidence bearing upon the transmission of bovine tuberculosis to man on the same terms that evidence was accepted as to the transmission of the disease from man to man.

The Committee concluded that it would require much work to decide with even approximate accuracy the proportion of human tuberculosis caused by animal infection; but the fact that 25% of the cases in children investigated by the German Commission, and 50% of similar cases investigated by de Schweinitz, showed by this test that they were caused by animal infection was sufficient to convince the Committee that measures should be taken and enforced at once to guard against infection from this source.

GEN. GEORGE M. STERNBERG said that the Koch school was disposed to differentiate very closely between pathogenic bacteria along specific lines, but investigation had shown that all pathogenic bacteria varied greatly in virulency. Pasteur, in his earlier researches, showed how attenuated varieties might be produced. Motile bacilli might lose their motility, etc. Furthermore, pathogenic bacteria might become practically non-pathogenic as the result of cultivation, as in the case of the diphtheria bacilli, and the tubercle bacillus showed the same characteristics.

DR. GARDNER T. SWARTS mentioned the shaking of the hide of the cow as a means of transmission of tuberculosis through milk, in addition to shaking the udder during the milking process.

DR. JOHN GUITERAS said the results in Cuba tended to show the transmission of tuberculosis through milk was not as frequent as was generally supposed. No milk was used in Cuba that was not boiled, and yet he believed infantile tuberculosis was as frequent in Cuba as elsewhere.

DR. J. M. LINDSLEY did not believe consumption, strictly speaking, was a contagious, infectious or hereditary disease. He said it was a product of wrong living. This wrong living might be from taking milk from tuberculous cows, or from living in a tuberculous house.

DR SALMON said that while Cuba sterilized its milk more than America did, yet it might also be the case that if Cuba did not sterilize its milk it would have more tuberculosis than it did at present.

REPORT OF THE COMMITTEE ON THE CAUSES AND PREVENTION OF INFANT MORTALITY.

This report was read by DR. HENRY MITCHELL of Asbury Park, N. J., Chairman. Among the measures which were most promising for a further reduction of the mortality among infants, the Committee directed attention to the following:

(1) To secure a more general adoption of cleanly methods of the collection, cooling and handling of cows' milk. It was not enough to destroy bacteria which had been permitted to gain entrance into the milk, for while pathogenic bacteria might be rendered innocuous, the toxines already formed were not affected by high temperature, hence no manipulation of the milk could be safely substituted for cleanliness in its collection and distribution. (2) To abolish breeding places for flies in dwellings and to exclude them from contact with food. (3) To encourage the erection of improved tenements in cities and to show the dwellers in crowded districts the advantage of residence in the suburbs. (4) To more effectually isolate all cases of the dangerous communicable diseases.

IMMIGRATION AND PUBLIC HEALTH.

DR. A. J. MCLAUGHLIN of Washington, D. C., read a paper on this subject. In considering the danger to the public health from immigration, he said three factors must be taken into account: First, the physique of the immigrant. Second, his destination. Third, the presence or absence of communicable disease. The physique of the immigrant was by far the most important factor. Destination was scarcely less important than physique, and it was the rule that aliens of a race having a low physical standard would invariably herd together in the overcrowded unsanitary tenement districts of our great cities; while the sturdy races of unskilled laborers were scattered over a wide territory and tended to establish little homes of their own in the country or in the suburbs of manufacturing towns or cities. As to the question of communicable diseases among immigrants, the ordinary quarantinable diseases were eliminated by efficient quarantine methods, but certain communicable maladies, classed as loathsome or dangerous contagious diseases, existed among immigrants, and constant vigilance and considerable skill were necessary on the part of medical inspectors of immigrants to detect these cases and separate them from the healthy immigrants. The most important of these diseases, because of its frequency, was trachoma. Of the total number of cases of loathsome or dangerous diseases found in immigrants, 87% was due to trachoma, and 10% to favus.

The writer concluded that if the thousands of recruits for the sweat-shop army which arrived each year could thus be checked for ten years, the present existing tenement-house problem would solve itself. The terrible congestion of the tenements would be relieved; the scale of wages for the sweat-shop worker would be elevated; and the general sanitary conditions of life in such districts as in the lower East Side, New York City, improved sufficiently to reduce the menace to the public health from this cause to a minimum.

PREPARATION OF VACCINE VIRUS.

DR. JOHN F. ANDERSON of Washington, D. C., said experimental work had shown that the germicidal action of glycerine was feeble. Recently some valuable work had been done with other substances than glycerine to be used in the destruction of the bacteria found in vaccine. These substances were sodium biborate, boracic acid, carbolic acid, chloroform and potassium cyanide. Of these, chlorof rm seemed the most valuable.

According to Green of England, by the use of chloroform vapor the crude pulp was freed from non-sporebearing germs in from a few hours to seven days, while the active agent of the vaccine remained potent as long as in the glycerine controls, and in some cases longer. The quick elimination of the extraneous bacteria by this method was a great saving in time as compared with the use of glycerine, which rarely exerted its full effect before the fourth week. Chloroform being extremely volatile could be allowed to evaporate from the vaccine under aseptic precautions after being allowed to act as long as desired. It would be especially useful in hot countries where the active agent in vaccine does not retain its potency long, or when, as in epidemics, sudden calls were made for large quantities of virus.

DR. EDUARDO LICEAGA, of Mexico City, offered some suggestions in regard to the desirability of an agreement between the sanitary authorities of adjoining countries for mutual defense against transmissible diseases.

ADDRESS OF WELCOME.

This was delivered by HON. H. B. F. MACFARLAND, President of the Board of Commissioners of the District of Columbia. After expressing his gratification that the Association had assembled in Washington, he stated that the city had a particular claim upon the interest of the Association at present because of the work of improving the water supply and sewer systems which was in progress, and also because there was being made an earnest effort to secure legislation from Congress to enable the city to end the unsanitary conditions in its alleys where the slums existed. It was fully realized that the health of the people was the first duty of the statesman, and that all else that could be done for this or any capital went for nothing if its health was not protected and promoted.

PRESIDENT'S ADDRESS.

Following Mr. Macfarland's welcome, SURGEON-GENERAL WYMAN, President of the Association, delivered his annual address, during the course of which he gave an exhaustive review of the history of the Association, its aims and objects, the researches into the fields of medical science which it had conducted, and the results it had accomplished. Coupled with this, he gave an epitome of the causes that led to the formation of the Association and the history of its growth by the addition from time to time of the various countries of the Western Hemisphere, the last of which to join the Association and take up its part in the field of scientific research being Cuba, only recently liberated from the bonds that had pre-

vented her from assuming her proper sphere in a study of one of the most deadly plagues with which she had been for years afflicted.

After reviewing the need and effect of sanitation, the sanitary laws of states and municipalities, Dr. Wyman paid a tribute to the unselfish medical men who for the good of science and from a sense of civic pride had repeatedly carried out investigations in the interest of the public health and given their services without thought of compensation to the public good.

He cautioned the members against being placed in the role of reformers, who, he said, often sought one worthy object and attained it at the expense of many other objects no less meritorious; that their dependence upon an enlightened public sentiment and the careful scrutiny of every proposed message forefended them against inconsiderate, spasmodic or overzealous action, but that they might exhort others in behalf of those measures which would insure to the rich protection from the dangers surrounding the very poor and to the very poor sanitary dwellings, pure air, good water and sunlight in abundance, the God-given blessings of the human race, which should be inalienable. This would then create an aristocracy to which all might belong — the aristocracy of sunshine.

REPORT OF THE COMMITTEE ON THE DISPOSAL OF REFUSE MATERIALS.

MR. RUDOLPH HERING, New York City, read this report. The committee pointed out that (1) different local conditions demanded different methods of collection and disposal; (2) that each municipality should select the method which, after a careful study of specific local conditions, and a further careful investigation of the cost of securing satisfactory results, proved to be the most economical in construction and maintenance; (3) that the problem must include the consideration of the methods and cost of handling all of the several kinds of refuse between the origin in the house and on the streets and the points of final disposal; (4) the several kinds of refuse being ashes, street sweepings and manure, dry rubbish, and kitchen garbage, swill or slop. In conclusion, the Committee said that while there were several methods of satisfactory disposal, every one would not be the best for all cities. Each city should study the question as related to its own special condition, and from a large experience both in Europe and at home, select what was found best for itself.

REPORT OF THE COMMITTEE ON THE ETIOLOGY OF YELLOW FEVER.

DR. JOHN W. ROSS, U. S. N., Washington, D. C., read this report. Reference was made to contributions to the subject of yellow fever since the last annual meeting. A table was presented of cases treated at Las Animas hospital, Havana, from Oct. 20, 1902, to Oct. 20, 1903, showing the number of cases of yellow fever and of other diseases; also of the patients immune and non-immune to yellow fever.

He said during the past summer there had been a sharp epidemic on the Mexican littoral. Havana was in constant communication with the infected ports; ten regular passenger steamers plied to and fro each month with a considerable passenger traffic, not to mention the number of other vessels. The quarantine was rigid in preventing the entrance of persons who had been exposed to infection until the period of incubation had passed, and also against the entrance of mosquitoes from these ports; but no precautions were taken against the entrance of baggage, bedding or household goods from those ports. Such things came in without let or hindrance; yet not a single case of yellow fever originated in Havana. Seven cases of yellow fever occurring among men from these vessels were treated in the hosiptal in Havana during the last yellow fever season, with no precautions except to prevent the access of mosquitoes to the patients, still with no case of yellow fever contracted therefrom.

Attention was called to the fact that this was but a repetition of the experience of the previous year. The chances of this being an accident, considering the former history of Havana, seemed scarcely worthy of consideration. The Committee stated that there were minor problems in the etiology of yellow fever yet to be investigated.

REPORT OF THE COMMITTEE ON THE CANTEEN IN ARMIES.

DR. GEORGE M. KOBER, Chairman, Washington, D. C., read this report. Reference was made to the introduction of the canteen system, and after dwelling at great length on the increase of drunkenness, the increase of trials by summary or other courts for drunkenness and for offenses caused by drunkenness, increase of desertions; increase in abscene without leave; effects of the abolition of the sale of beer at the posts on the morality and discipline of the command, the Committee recommended the presentation to the Senate and House of Representatives in Congress of the following resolutions, which were adopted by the Association:

Resolved, that this body deplores the action of Congress in curtailing the authorization of the army canteen or post exchange and in the interests of general and military sanitation recommends its establishment on its former basis at the earliest possible date.

Resolved, that this body, in the interest of temperance and humanity, cordially invites the intelligent co-operation of a very large element of good citizens, who have been active in securing legislation against the sales in the military service of alcholics of any character, in taking successive steps toward the betterment of existing conditions, and thus assist in controlling and largely curtailing an evil which it is powerless at present to prevent.

Recent Literature.

A Manual of Operative Surgery. By SIR FREDERICK TREVES, Bart., K.C.V.A., C.B., LL.D., F.R.C.S. New edition, revised by the author and JONATHAN HUTCHINSON, JR., F.R.C.S. In two volumes. Vol. I. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1903.

This volume (Vol. I of this new edition) of 750 pages is a book which at once attracts attention. First it is conspicuous by its ornate appearance, its binding and rough edged leaves. Again the reputation and previous work of its author are of such a character that one examines with interest this his latest production.

Appreciating the many changes that have occurred during the past decade, Mr. Treves has attempted to entirely revise his previous edition of this work, which appeared in 1891. Many sections have been rewritten or remodelled, and great effort has been made to bring the work thoroughly up to date. This applies to the illustrations as well as to the text. For the convenience of the reader historical details relating to operations and sections of minor importance are printed in smaller type. The subject matter is classified as follows:

Part I. General principles of operative surgery, including details relating to the preparation of patients for operation, to dressings, post-operative treatment of wounds, the selection of instruments, the elementary principles of operative technique.

Part II. Ligation of arteries.
Part III. Operations on nerves.
Part IV. Amputations.
Part V. Operations on bones and joints.
Part VI. Tenotomy.

The operative measures described are those which have appeared best to the author, as tested by an extended personal experience in the operating theater and repeated studies on the cadaver. Also the comparative merits of the various operations described are discussed. The introductory chapters, especially that in which the indications and contraindications for operation in the individual patient are discussed, are forcible and instructive; notably so in the present era of operative enthusiasm. The chapter on aseptic technique is interesting as compared with the methods of this country, since it presents some differences. The plan adopted for the presentation of special operative procedures is as follows: First, the history of the operation in general is described and its indications stated. Next, the instruments required are enumerated. Then the arrangements of patient, operator and assistants, the anatomy of the region by layers (the anatomical landmarks and guides being noted), the operative technique, the dressings and, finally, the after treatment, with often the final results are presented. In the section on amputations the general consideration of the subject is unusually full, and contains many valuable suggestions relating to the formation of and the secondary changes in stumps, the instruments used, the methods of flap-formation and other interesting data. In the section on excisions the statements of after-results of operations are of especial interest and importance, particularly to a surgeon of limited experience, or to the student. The new illustrations are a feature of the volume, and greatly increase the facility with which the reader masters the text.

The book is carefully and well written, and is an excellent presentation of modern surgery. The subject is well classified. It is systematically arranged. The story is effectively told. It is a work fully up to the established standard of its noted author, and the next volume, which will contain the surgery of special regions, much of which may be termed atypical, will be awaited with great interest.

The Diagnosis of Diseases of Women. A Treatise for Students and Practitioners. By PALMER FINDLEY, B.S., M.D. Illustrated with 210 engravings in the text and 45 plates in colors and monochrome. Lea Brothers & Co. 1903.

As stated in the preface, medical literature in the English language has not hitherto included a work on this subject.

To justify the making of a book of 494 pages on a single department of a specialty, albeit that most important one, diagnosis, the author ought to furnish much more complete and much fuller information on his subject than can be found in the best of contemporaneous textbooks. It is a question whether Findley has done this so as to offer to the student and practitioner what cannot be found in the usual treatises.

From the standpoint of the specialist who is studying diagnosis the book is a decidedly good one. The ground is carefully gone over, the style is clear, the illustrations are remarkably good, especially those of instruments and appliances, and the subject matter is in accord with the latest teachings. Lea Brothers have produced a handsome volume which maintains their usual high standard in typography and binding.

Diseases of the Skin. An Outline of the Principles and Practice of Dermatology. By MALCOLM MORRIS. With two colored plates and 58 plain figures. New edition. Chicago: W. T. Keener & Co. 1903.

The author states that the revised edition of this book, which was published in 1898, has been out of print for some time. In the present new edition much new matter has been added and there has also been some judicious pruning. Of the new illustrations, many are extremely good. For its size the book is quite complete, as almost all of the more recently described affections are at least touched upon.

The Principles and Practice of Surgery. By George Tully Vaughan, M.D. (University of Virginia), Assistant Surgeon-General, Public Health and Marine Hospital Service of the United States. Philadelphia and London: J. B. Lippincott Co. 1903.

This is a compactly written volume of convenient size (569 pages) and moderate price, designed to present the subject of general surgery in a way best adapted for the use of the general practitioner and student. For this reason the consideration of surgical specialties have been omitted. The author's purpose has been to present the subject matter from the most practical point of view, avoiding long theoretical discussion; in other words, a book of ready reference for the student preparing for examination when there is not time to review the more complete works usually studied; or for the busy practitioner who must at times refresh his memory in the most concise practical manner possible.

The subject is presented in two parts: Section I, which treats of the usual general subjects, such as inflammation, wounds, anesthesia, infection and infectious diseases, tumors and cysts; also, operative and minor surgery, bandaging, skiagraphy.

Section II, which comprises more than three-fifths of the book, is devoted to the surgery of "Systems and Regions," classified physiologically into the vascular, osseous, respiratory, degestive, genito-urinary and other systems. In this section are chapters on orthopedic surgery and tumors of the breast.

The text is illustrated by 281 wood-cuts, diagrams and reproduction of photographs, which graphically present clinical, pathological and traumatic conditions, details of surgical technique, instruments and apparatus.

Any work in which modern surgery is condensed into 533 pages must necessarily deal only with the more important and ordinary subjects. The task of making this selection is a very difficult one. In this volume it has, on the whole, been satisfactorily accomplished, and except, perhaps, in minor details the reviewer finds little to criticise and much to commend. It seems to be well adapted to occupy the position for which it is intended.

To a student in books of this type it is often difficult, on account of the arrangement of the text, to distinguish between what he is to consider as a complete presentation of a given subject, what is a statement of accepted facts or demonstrated actualities; and what is incomplete, merely the opinion of to-day, or a temporarily accepted method of treatment on account of ignorance of something better. It would be well, perhaps, if this distinction should be more definitely made than it is in this volume, although often this point is purposely ignored in order to prevent confusion of the readers' impressions. However, to make a subject too simple incurs the risk of creating a false impression of accuracy. An illustration of this is the description of aseptic technique, the treatment of osteomyelitis, or the post-operative treatment of club-foot.

It is as a rule well that a student should be able to separate clearly facts from theories; what is satisfactory, productive of definite results and practical, from that which is only used as an expedient in the absence of what is surely efficient.

Ambulance Work and Nursing. A Handbook on First Aid to the Injured, with a Section on Nursing, etc. Profusely illustrated. Chicago: W. T. Keener & Co.

This rather ornately published volume in blue cloth and gold with its numerous illustrations is a book which by its "exterior," so to speak, attracts attention. It is according to its preface intended to be strictly a "First Aid" book, since great emphasis is placed on the importance and value of this class of knowledge to non-medical people.

It consists of two parts, the first of which deals with "First Aid to the Injured," while the second is devoted to Nurses and Nursing, Massage Bone Setters and Bone Setting.

Part I is classified as is usual in this type of book. The essentials of anatomy and physiology are concisely described and are well illustrated. Then the subjects of bleeding, wounds, bandaging, fractures, obstruction to respiration, insensibility, burns and scalds, "fire," poisoning, foreign bodies, transportation of the injured and stretcher exercises are successively treated.

Part II consists mainly of the details usually found in nurses' manuals, with the exception of the chapter on bone setting, and is based on English ideas and methods.

The book is a small quarto of 305 pages and 173 illustrations. It is well indexed. As above stated it is written with the evident intention to produce a book intelligible to the non-medical part of the community, and of as practical a nature as possible. It is indeed unusually free from technical phraseology. The name only of its publishers appears on its title page. Its style is at times fragmentary. It contains many valuable suggestions and shows the influence of practical experience and a practical mind in its compilation. On closer inspection one notes here and there minor details which cause the reader to gradually form the opinion that it is a book (like many of its class) which requires a technical knowledge sufficient to separate the "wheat from the chaff;" also in certain subjects, as for example, "disinfection," that it is not in accordance with the most recent ideas. Again it has a characteristic common to this class of book that occasionally extraneous material is introduced in a detailed description of treatment which impairs its conciseness, confuses the reader and much diminishes the definiteness of the description of details.

It is not intended by the above criticisms to imply that the book has nothing to commend it, for, on the contrary, it is very interestingly

written and is full of valuable practical points. It presents also many instructive and suggestive illustrations. Its title page without an author's name and its evidently English character, while presenting the name of a Chicago publisher, stimulates one's curiosity to learn the personality of its writer and its history.

Compend of Gynecology. By WILLIAM H. WELLS, M.D. Third edition revised, enlarged, with 145 illustrations. Philadelphia: P. Blakiston's Son & Co. 1903.

This third edition of Dr. Wells' compend has been improved by the addition of a chapter on the general therapeutics of gynecology. It is a valuable book of its kind for the student who wishes to refresh his memory.

It has the disadvantages of all compends in that the detailed descriptions are necessarily cursorily treated and incomplete. It would seem to be of more advantage for the student to have full directions for the performance of a limited number of selected operations rather than scanty directions as to many.

It is to be doubted whether a short paragraph is sufficient to give an adequate idea of Dudley's operation for anteflexion, for instance (page 126). Many operators find this operation difficult to understand even with the aid of the best illustrations of the various stages and an abundant descriptive text. With the exception of the figuring of a few obsolete instruments and pessaries the book is well up to date and should maintain its former popularity.

A Text-Book of Surgery for Students and Practitioners. By GEORGE EMERSON BREWER, A.M., M.D., Lecturer on Clinical Surgery at the College of Physicians and Surgeons, Junior Surgeon to the Roosevelt Hospital, Surgeon to the City Hospital, etc., etc., etc. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1903.

This book is a handsomely published volume of 706 pages, illustrated by 280 engravings and 7 plates in color and monochrome.

The first eight chapters are devoted to general subjects such as infection, inflammation, acute and chronic infections, surgical diseases, tumors, shock, technique and anesthesia. The remainder of the work deals with the surgery of regions, systems and organs classified anatomically; but with the exception of the chapters on deformities, genito-urinary surgery in the male and the rectum, "special" surgery has been omitted.

The title of the book indicates its purpose. It has been written to furnish a comprehensive yet abridged text-book in surgery which presents the accepted modern views of pathology and treatment as well as the essential practical facts as concisely as is compatible with clearness. The surgery of to-day has developed so rapidly that the modern text-book usually comprises two large-sized volumes. Hence one opens the single compact octavo of Dr. Brewer's with curiosity and interest to learn how he has condensed his subject into its present convenient form without essential sacrifice. As one reads, however, the plan becomes apparent, and the reader's doubt as to the possibility of the task gradually disappears and he is ready to congratulate the author on his success, for certainly he has produced a text-book which is a well balanced, well adapted work for students. This has been accomplished by attention to several details, First mention of special surgery, as for instance, the eye, ear *et alii*, has been omitted. Next no bibliography or citation of authorities is introduced except when recent methods are mentioned which have not yet received general recognition. Again, when several or many methods or opinions exist, only one or two (the ones in the author's opinion mos satisfactory) are selected and described.

The book is a presentation of the most advanced ideas both as regards pathology, laboratory work, operative technique and treatment. This is shown in the chapter on abdominal affections, especially the surgery of the stomach and biliary passages, the surgery of aneurism, acetonemia, etc.

One must not expect in a book of this size to find full details, and often the description given is very brief; but when one reads carefully what is presented, one finds the essentials are usually given. For example, the "Edebohl" treatment for chronic nephritis which is condensed to a single paragraph, but in that paragraph is stated the procedure, its originator's name, the supposed pathological effect of the operation of decapsulation, the manner of cure, a statistical summary of the results and an opinion of its practical value.

The whole book shows the same concise style, pregnant with facts, well classified and systematically arranged, excellently well presented from a "graphic" standpoint.

It will without doubt be received by students with favor and its author is to be congratulated on the satisfactory, commendable manner in which he has performed a most difficult task.

Medical Jurisprudence, Insanity and Toxicology. By HENRY C. CHAPMAN, M.D., Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College, Philadelphia. Third edition, thoroughly revised, greatly enlarged and entirely reset. pp. 329, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

This, as its name implies, is a small volume on the general subject of medical jurisprudence, being essentially the lectures given on this subject by the author to his medical class at the Jefferson Medical College during the years 1891 and 1892. The author discusses the usual matters which bring medicine into relation with the law, and offers them in brief, readable form, with adequate illustrations in the text. This third edition has been revised to meet the advances in the subject, and the book, although far from exhaustive in its treatment, should still find a place of usefulness, particularly as was originally intended, in the crowded curriculum of the modern medical student.

THE BOSTON

Medical and Surgical Journal.

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THE CANCER QUESTION.

IN spite of the somewhat negative results hitherto obtained in the investigations regarding the etiology of cancer, interest in the subject does not appear to be in the least on the wane. On the contrary, the elusiveness of the problem apparently adds a certain zest to the zeal of its investigators, and the literature is continually growing in consequence.

We have before us the fourth annual report of the work of the Cancer Laboratory of the New York State Board of Health. This laboratory, under the direction of Dr. Roswell Park of Buffalo, has been assiduously engaged in the cancer research for the last four years. This fourth report is a pamphlet of upwards of one hundred and sixty pages, containing the results of the work done by the various persons connected with the laboratory during the past year.

Dr. Park in his report draws attention to the fact that the work is now being conducted along three principal lines and in three laboratories. Investigations on the pathological, the chemical and the bacteriological sides are being used in correlation in the hope of reaching results which a single line of investigation has hitherto been unable to accomplish. Metabolism in the broadest sense is being studied in relation to cancerous disease.

Regarding the much disputed protozoa and the part they play in the genesis of cancer, Dr. Park makes the following remark:

"There is not a practising physician in the United States who has anything more than a rudimentary knowledge of this subject, and yet the question of cancer is becoming more and more a biological problem."

To meet this need Prof. Gary Calkins of Columbia University has been added to the laboratory staff as consulting biologist. Dr. Gaylord contributes several articles in continuation of the work he has hitherto done, and which is already well known to many of our readers. A paper of the report to which we desire to call special attention is from the pen of Professor Calkins, whose authority on the subject of the protozoa is wide reaching. In this paper, under the title "Suggestions for the Biological Study of Cancer," Professor Calkins maintains in the first place that, inasmuch as the specific organism of smallpox, as discovered by Dr. Councilman and worked out through its life cycle by himself, is no longer open to doubt, it follows that the contention for a like origin of cancer is strengthened, and that we are therefore justified in considering as a working hypothesis that the cell inclusions in carcinoma are phases of an organism. He thinks that:

> Inclusions in carcinomatous tissues should be studied by specialists trained to the study of protozoa and not left exclusively to pathologists, many of whom regard all structures which are to them incomprehensible as some type of degeneration product of the cell. Such a study, made with the best methods and the best technique that the zoölogical side can afford, should lead to an independent point of view, and should give definite results, which, together with those of the pathologist, the chemist, the physiologist, and the surgeon, should give a clear conception, if not a solution, of the general problem of carcinoma.

Professor Calkins also urges work from the physiological and chemical points of view, with reference especially to the possibility of a specific activity of toxins derived from micro-organisms. Finally he believes that the experimental side of the question may ultimately give definite results. The morphology of the so-called cell inclusions demands further study, and the work hitherto done, although far from complete, leads him to the provisional assumption that the cell inclusions are not secretions, as described by Greenough, or degeneration products of the cell, nor modified centrosomes and spheres, but are phases of an organism belonging to the group protozoa.

Coming from such a source, this statement must attract wide attention and renew the somewhat waning interest in the protozoa as the important etiological factor in cancer. Professor Calkins' remarks, however, are not to be interpreted as a belief that protozoa are the cause of cancer. His contention merely is that evidence is accumulating which, with our increased knowledge of the morphology of the protozoa, is likely to make the demonstration positive that protozoa do

exist in cancerous tissue, whatever their significance there may be, — a contention which gains weight from certain organisms discovered in smallpox, and more recently observed by Mallory in scarlet fever. The remainder of this Buffalo report indicates much earnest work on various phases of the general problem, not as yet conclusive, but at least promising for the future. Certainly the laboratory is to be congratulated upon having obtained the services of Professor Calkins, who stands pre-eminent in his knowledge of these lower forms of animal life.

The *British Medical Journal* for Dec. 12 publishes as the Bradshaw Lecture an address by Mr. Henry Morris on "Cancer and its Origin," together with a series of papers by various authors on the general subject, among which one on the parasitic theory of cancer by H. G. Plimmer will be read with interest. Mr. Morris reviews the various theories which have of late been advanced, and concludes that the so-called tumor germ theory of Cohnheim is deserving of the most faith. Plimmer naturally holds to the view, which he has often previously expressed, that the parasitic theory alone explains the facts and is therefore most worthy of acceptance. From Germany comes a second paper from Feinberg that the parasite of cancer is a protozoön belonging to the special class of sporozoa.

It is not to be doubted that ultimately, out of the various conflicting opinions, a definite and satisfactory solution will come. In the meantime those of us who are not actually engaged in the research must assume the attitude of unprejudiced observers and give to each theory its due. We beg leave now merely to call attention to the fact that the parasitic origin of the disease through protozoa has received a new impetus which must be acknowledged and from which no doubt certain definite results will come.

HYDROTHERAPY AND ALLIED METHODS OF TREATMENT.

ONE of the most noticeable features in recent therapeutic advance is the increasing attention which is being given to what, for want of a better term, we may call physical methods of treatment. Physicians are gradually coming to recognize that such therapeutic measures demand serious consideration, and also that they may be adequately given at home and at relatively small expense. For years past, well-to-do persons have sought foreign baths and health resorts at their physicians' advice for a great variety of ailments and have no doubt, in many instances, been materially benefited thereby. We are not disposed to maintain that equally satisfactory results could always be attained by similar treatment at home, but we are, at least, convinced that very much more could be accomplished than is ordinarily supposed possible by the establishment under strictly medical control of properly equipped institutes for this type of treatment. For many patients it is an impossibility to go abroad or to a distance in this country or even leave their occupations for any length of time in search of health, and for these as well as for the more independent it seems our manifest duty to provide.

It is eminently reasonable, therefore, that cities which pride themselves on their progressiveness in medical matters should be adequately provided with those means of treatment which cannot be satisfactorily given in the individual physician's office. Such an establishment should ensure not only treatment by baths and water generally, but also the possibility of using electricity in its various forms, hot air cabinets, light rays, and, in fact, whatever appears to promise a rational means of benefit or cure.

It should also be remembered that such methods of treatment are not limited to any one class of patients, but that under certain conditions, arterial, cardiac, pulmonary, renal, rheumatoid, joint and nervous affections may all be benefited. Finally, it is desirable, if these methods of treatment are to be applied at all, that they should be given under strict medical control, which alone provides reasonable assurance that harm may not be done in cases requiring special precautions. It is self-evident that unless such treatments are given skillfully and with knowledge they will neither appeal to the intelligent physician nor be of benefit to the patient. On the other hand, we are confident that under proper conditions of management and medical direction a very positive benefit to the community would result.

In consideration of these facts, and recognizing, as we do, the need of such an establishment for hydrotherapeutic and other treatment of an allied sort, we take pleasure in calling to the attention of our readers a letter printed in another column from Drs. Putman, Cutter and Lovett, in which they speak of an enterprise of this character in Boston, which is now well started, but which will require the co-operation of the profession at large if it is to fulfill its completest function. We have no doubt that physicians, in whatever line of practice, will feel the need which we have at-

tempted to express and will rally to the support of an enterprise which should prove a credit to themselves and to the city.

INVESTIGATION OF THE BUTLER TYPHOID EPIDEMIC.

IT is always a sign of progress in the conflict with disease when persons other than physicians take an active and intelligent interest in its cause and prophylaxis. Tuberculosis will no doubt finally be held in check through the efforts of the laity rather than through the direct work of the physician. The cause of typhoid fever likewise is coming to be generally understood by intelligent people without medical training, and no doubt this will in time prove the greatest possible safeguard to the community.

It is, however, extremely rare to see the subject of a typhoid epidemic discussed with the skill and acumen which characterizes a paper in the current number of the *Engineering News* from the pen of George A. Soper, an associate member of the American Society of Civil Engineers. In most systematic form, amply illustrated, Mr. Soper discusses with much detail the cause, the course and the outcome of the phenomenal epidemic of typhoid which has recently visited Butler, Pa. The cause of this epidemic, which fortunately appears now to be under control, was the water supply. Water for some months had been taken from a creek at a point at which it was obviously polluted. No disease appeared, however, so long as filtration was carried on. Filters were discontinued from Oct. 20 to Oct. 31, and the epidemic began Nov. 2.

We have not space to enter into detail regarding the scope of this most admirable paper. We, however, wish to call the attention of our readers to it as a model example of a systematic, succinct and exhaustive treatment from the sanitary point of view of a notable typhoid epidemic. It may well be read by physicians everywhere and should serve as an object lesson of the methods by which such an investigation should be carried on. As we suggested at the outset, this paper is of particular interest as coming from a man presumably not primarily interested in the medical aspects of his subject. It also demonstrates how with the increase of special knowledge it becomes necessary for the civil engineer to encroach upon what formerly would have been called the domain of the physician, and conversely is suggestive of the fact that the modern physician may well devote a part of his time to the scientific investigation of the problems of engineering, particularly as applied to sanitary questions.

So far as this epidemic is concerned, we are gratified to make mention of the fact that even before the complete cessation of the disease the situation has been thoroughly discussed and the facts presented to the medical profession as well as to sanitarians in a way which precludes the necessity of a further medical investigation. If physicians may thus depend upon sanitarians without definite medical training for their investigations into epidemic disease, we may certainly look forward to a still more speedy conquest of what are now coming to be regarded as preventable conditions.

Pennsylvania's misfortune seems to be in a measure merited. We have on more than one occasion alluded to the wholly inadequate provision made for the work of its Board of Health by that state, and it is not difficult, in such typhoid epidemics as this of Butler, to read a lesson which the state should certainly take to heart. If the experience through which this town and Plymouth in the same state has recently passed has no other effect than to stimulate the authorities to an appreciation of the necessity of an adequate health board, a result of much value will have been gained, though at a high cost.

PHYSICIANS FOR THE PHILIPPINES.

IT is announced by the United States Civil Service Commission that on the days of Jan. 27 and 28 examinations will be held at various places to fill vacancies in the position of physician in the Philippine service with a salary ranging from $1,200 to $1,800 a year. Applicants, who must have had at least one year's experience in hospital work or as assistant surgeons in the army in the Philippines, are to be examined in the various fundamental branches of medicine, including questions on tropical diseases.

As inducements to this service it is suggested that the service itself has many attractive features, and involves a visit to a most interesting part of the world. China and Japan are near and are suitable places to visit during vacations. The service is classified, promotions are probable, the climate is good, and as a rule employees maintain excellent health. Liberal arrangements are made regarding traveling expenses and after a certain period spent in the service. Is is suggested that the cost of living in Manila or in its suburbs is relatively small, and that rents will probably be less in the future than now.

We are strongly inclined to think that this service will be attractive to many men of good medical attainment. When one considers the almost hopeless competition at home one wonders why more young men of ambition and proper equipment do not avail themselves of such offers for positions in the government service. Various indications seem to show that medical men are being accorded a more proper position in the army than heretofore, and with this legitimate concession it is not to be supposed that the service will long be lacking in suitable men.

MEDICAL NOTES.

INDEX MEDICUS. — With the following opinion of the *Medical News* we are in entire agreement:

This valuable publication has now some 450 subscribers — a meager list and unfortunately a commentary on bibliographical scholarship. We learn that there is every reason to believe that if 500 bona fide subscribers can be secured the Carnegie Institute will continue its appropriation and make the *Index* a permanent affiair. American physicians should not rest under the imputation that there are only 500 of its 120,000 practitioners who are up and alive to the interests that the *Index Medicus* represents. There should be thousands of active, wide-awake men in this country ready to support the *Index*. American physicians are proud of their institutions. Surely the extent of this is not measured by a paltry $5

THE GERMAN EMPEROR. — The *British Medical Journal* is authority for the statement that the German Emperor has practically entirely recovered from his local ailment. His voice is again clear and resonant. Professor Schmidt has been honored by an effective privy councillorship, which carries with it the title " Excellency." Professors von Esmarch, von Bergmann and von Behring are hitherto the only physicians who have received this distinction.

REAPPOINTMENT OF CHICAGO'S HEALTH COMMISSIONER. — Dr. Arthur R. Reynolds has been reappointed Commissioner of Health of Chicago, by Mayor Harrison, and his appointment has been confirmed.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Dec. 30, 1903, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 55, scarlatina 54, typhoid fever 9, measles 129, smallpox 0.

A CENTENARIAN. — Mrs. Hannah Newell Barrett has recently died in Boston at the age of upwards of one hundred and three years. In addition to being one of the city's oldest residents, Mrs. Barrett also had the honor of being the oldest daughter of a soldier of the Revolution drawing a pension from the Government.

REPORT OF STATE HOSPITAL AT TEWKSBURY. — According to the annual report of the trustees of the State Hospital at Tewksbury, there were admitted to the institution during the year under consideration 3,493 persons, being 247 more than in the previous year. The whole number cared for was 4,688, or 216 more than in the previous year. Among these, 606 were insane. Of the total number, 3,698 were treated as hospital patients, which gives one an idea of the prominence of this portion of the institution's work as contrasted with the almshouse element. Among the recommendations, the trustees present as the most urgent needs a ward for consumptive women, wards for the isolation and treatment of contagious diseases, a home for male attendants, and additional land for cultivation and pasturage.

LOWELL LECTURES ON BACTERIA IN MODERN MEDICINE. — Dr. Harold C. Ernst, Professor of Bacteriology in Harvard University, will deliver a course of free public lectures under the auspices of the Lowell Institute, beginning Jan. 5, 1904, on the general subject of " Bacteria in Modern Medicine." The lectures will be given Tuesdays and Fridays of each week until the course of eight lectures is completed. Special topics to be considered are:

(1) Considerations in Regard to Infection. (2) General Characteristics of Pathogenic Bacteria. (3) Methods of Action of Pathogenic Bacteria. (4) Defence and Reaction of Living Tissue against Bacteria and their Products. (5) The Condition of Immunity. (6) Immunity, continued. (7) Therapeutic Measures. (8) Hygienic and Prophylactic Measures.

APPOINTMENT OF GEORGE T. TUTTLE, M.D. — It is announced that Dr. George T. Tuttle, who has for many years been connected with the McLean Hospital, will succeed Dr. Edward Cowles as superintendent of that institution. The position of first assistant physician will be filled by Dr. E. Stanley Abbott, at present assistant superintendent of the Boston City Hospital.

WAR UPON CONSUMPTION. — The Boston Association for the Relief and Control of Tuberculosis, to the work of which we have previously alluded, is sending out a leaflet entitled, " A War upon Consumption." This leaflet contains, briefly stated, a list of directions as to the prevention of consumption and as to methods of strengthening

the body against it. These directions are put in popular form and are excellently expressed. The general work undertaken by this association should certainly bear fruit in increased knowledge on the part of the community regarding tuberculosis.

NEW YORK.

Attending Physician to Manhattan College. — At a meeting of the board of trustees of Manhattan College, held Dec. 21, Dr. Arthur J. O'Leary, Registrar of the Bureau of Vital Statistics of the Borough of the Bronx, was appointed attending physician to the college, to succeed his father, Dr. C. N. O'Leary, who was killed recently in a railroad accident. Dr. A. J. O'Leary's grandfather was appointed to the position at the organization of the college, and was succeeded by his son, Dr. C. N. O'Leary.

The Seaman Prize. — The Seaman Prize ($100 in gold) for 1903 has been awarded by the Military Service Institution of the United States to Capt. J. P. Jerrey, Engineer Corps, United States Army, for his essay on "How Best to Promote Rifle Practice." The subject selected for competition in 1904 is Military Hygiene. This prize was established by Dr. Louis Livingston Seaman of New York, who was surgeon, wth the rank of major, of the Volunteer Regiment of Engineers in the Spanish-American War.

Smallpox at Buffalo. — Of nine cases of smallpox taken to the Quarantine Hospital at Buffalo on Christmas day, six were discovered at a dance hall in that city, where a large number of persons were exposed to infection.

Correspondence.

AN ESTABLISHMENT FOR HYDROTHERAPY.

Mr. Editor: We beg leave to call the attention of your readers to the fact that the arrangements are now complete for giving varied and variable treatments by water, in the Farragut Building, 126 Massachusetts Avenue, corner of Boylston Street, at the rooms formerly occupied for the same purpose by Miss Colby.

It must rest with the members of our profession in Boston and its neighborhood whether or not they will take the pains necessary to make this enterprise a success. If this end is gained we shall have a convenient establishment to which we can send patients suffering from local or general disorders of nutrition, such as are treated with benefit at "water cures" of various sorts, the world over. And not only is this true, but we shall be helping to support an establishment of enlarging usefulness; for it is the intention to introduce, also, other methods of treatment, so far as practicable, as by reliable forms of electricity, hot air, massage and the simpler kinds of exercise. This is to be pre-eminently a doctor's enterprise, and Dr. J. H. Pratt, who is in charge of it, will be glad to receive either the criticisms or the suggestions of any doctors who are interested to make them.

Yours truly, James J. Putnam,
E. G. Cutler,
R. W. Lovett.

RECORD OF MORTALITY

For the Week ending Saturday, Dec. 19, 1903.

Cities.	Population Estimated, 1903.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Diarrheal Diseases.	Typhoid fever.
New York	3,785,156	1,288	331	21.27	23.30	3.10	2.40	1.00
Chicago	1,885,000	550	133	20.54	17.27	2.73	3.63	1.98
Philadelphia	1,378,527	579	163	25.21	18.65	1.90	.69	2.07
St. Louis	618,481	—	—	—	—	—	—	—
Baltimore	535,713	199	47	17.08	16.57	3.01	.50	2.01
Cleveland	427,731	—	—	—	—	—	—	—
Buffalo	387,994	—	—	—	—	—	—	—
Pittsburg	351,745	146	—	29.45	12.33	7.53	.68	8.90
Cincinnati	335,140	—	—	—	—	—	—	—
Milwaukee	315,307	—	—	—	—	—	—	—
Washington	295,108	—	—	—	—	—	—	—
Providence	191,230	64	10	18.74	14.06	1.56	—	1.56
Boston	603,163	204	56	16.66	24.50	.98	.49	1.96
Worcester	132,044	23	10	8.70	4.34	—	4.34	4.34
Fall River	115,549	37	12	16.21	24.30	2.70	2.70	—
Lowell	101,959	24	6	8.33	20.83	—	—	—
Cambridge	98,639	20	8	25.00	20.00	5.00	—	—
Lynn	72,497	21	2	23.81	4.76	14.28	—	—
Lawrence	69,766	17	3	35.29	23.53	—	11.76	11.76
Springfield	69,389	23	4	9.09	9.09	—	—	—
Somerville	68,110	20	4	25.00	10.00	—	—	—
New Bedford	67,198	22	6	13.63	22.72	—	—	4.54
Holyoke	49,286	16	7	18.75	12.50	—	—	—
Brockton	44,873	5	0	—	—	—	—	—
Haverhill	42,104	6	2	16.67	—	—	16.67	—
Newton	37,794	4	—	25.00	—	—	—	—
Salem	36,876	10	—	—	—	—	—	—
Malden	36,386	10	2	20.00	—	—	—	—
Chelsea	35,876	9	1	—	—	—	—	—
Fitchburg	35,069	7	2	14.30	28.60	—	—	—
Taunton	33,656	12	2	25.00	8.33	—	—	—
Everett	28,620	2	2	—	—	—	—	—
North Adams	27,862	7	1	14.30	57.20	—	—	—
Gloucester	26,121	7	2	—	—	—	—	—
Quincy	26,043	6	1	16.67	16.67	—	—	—
Waltham	25,198	7	2	—	—	—	—	—
Brookline	22,608	—	—	—	—	—	—	—
Pittsfield	22,589	12	2	—	25.00	—	—	—
Chicopee	21,031	5	2	20.00	—	—	—	—
Medford	20,962	4	3	25.00	25.00	—	—	—
Northampton	19,883	3	—	—	—	—	—	—
Beverly	15,302	5	—	—	20.00	—	—	—
Clinton	15,161	—	—	—	—	—	—	—
Leominster	14,806	—	—	—	—	—	—	—
Newburyport	14,478	7	0	28.60	—	—	—	—
Woburn	14,300	8	1	25.00	25.00	—	—	—
Hyde Park	14,175	2	1	—	50.00	—	—	—
Adams	13,745	8	5	12.50	—	—	—	12.50
Attleboro	13,677	—	—	—	—	—	—	—
Marlboro	13,609	4	0	25.00	—	25.00	—	—
Melrose	13,600	1	—	—	100.00	—	—	—
Westfield	13,418	5	2	20.00	20.00	20.00	—	—
Milford	13,129	—	—	—	—	—	—	—
Revere	12,722	3	—	—	—	—	—	—
Framingham	12,534	—	—	—	—	—	—	—
Peabody	12,179	—	—	—	—	—	—	—
Gardner	11,928	—	—	—	—	—	—	—
Weymouth	11,844	3	0	—	—	—	—	—
Southbridge	11,362	—	—	—	—	—	—	—
Watertown	11,077	1	1	—	—	—	—	—
Plymouth	10,730	—	—	—	—	—	—	—

Deaths reported, 3,415; under five years of age, 836; principal infectious diseases (smallpox, measles, scarlet fever, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption) 714, acute lung diseases 666, consumption 343, scarlet fever 43, whooping cough 15, cerebrospinal meningitis 8, smallpox 30, erysipelas 10, puerperal fever 6, measles 32, typhoid fever 63, diarrheal diseases 63, diphtheria and croup 94.

From whooping cough, New York 6, Chicago, 1, Philadelphia, 2, Baltimore, Pittsburg, Boston, Cambridge, Holyoke and Woburn 1 each. From smallpox, Philadelphia 22, Pittsburg 8. From cerebrospinal meningitis, New York 6, Lynn 1, Somerville 1. From erysipelas, New York 4, Chicago 2, Philadelphia 2, Baltimore 1, Boston 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,075,011, for the week ending Dec. 5, the death-rate was 18.6. Deaths reported, 5,364; acute diseases of the respiratory organs (London) 193, whooping cough 87, diphtheria 55, measles 102, smallpox 3, scarlet fever 45.

The death-rate ranged from 7.4 in Kings Norton, to 34.4 in Wigan, London 17.8, West Ham 18.1, Brighton 15.3, Southampton 14.2, Plymouth 19.1, Bristol 16.6, Birmingham 15.7, Leicester 13.5, Nottingham 18.4, Liverpool 22.1, Bolton 19.2, Manchester 21.6, Salford 21.9, Bradford 22.3, Leeds 17.3, Hull 22.8, Cardiff 18.4, Rhondda 19.6, Merthyr Tydfil 19.6, Hornsey 10.6, Sunderland 21.6.

METEOROLOGICAL RECORD.

For the week ending Dec. 19, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

DATE	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A.M.	8.00 P.M.	Daily mean.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	8.00 A.M.	8.00 P.M.	
S..13	29.92	40	55	25	85	41	63	S W	W	34	16	R.	C.	.48
M..14	30.28	23	27	19	40	65	52	W	W	26	12	C.	C.	0
T..15	30.16	20	25	16	73	49	61	W	S W	8	15	C.	C.	0
W..16	29.87	22	28	16	67	66	66	S W	S W	12	15	C.	C.	0
T..17	29.97	20	30	11	68	71	70	W	N W	14	8	C.	C.	T.
F..18	30.34	16	20	11	58	30	44	N W	N W	14	18	C.	C.	0
S..19	30.49	22	34	11	45	22	34	W	S W	9	9	C.	C.	0
☞	30.15		31	16			56							.48

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; —, below zero. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DEC. 17, 1903.

BAILHACHE, Preston H., surgeon. Detailed to represent the Service at the "Convention to Consider the Questions Involved in Mosquito Extermination," to be held in New York Dec. 16. Dec. 4, 1903.

IRWIN, Fairfax, surgeon. Granted leave of absence for two days from Dec. 24. Dec. 17, 1903.

BROOKS, S. D., surgeon. To rejoin station at Savannah, Georgia. Dec. 16, 1903.

WHITE, J. H., surgeon. Granted leave of absence for five days from Dec. 17. Dec. 16, 1903.

CARRINGTON, P. M., surgeon. Three days' leave of absence from Dec. 15, 1903, under paragraph 189 of the regulations.

GUITERAS, G. M., surgeon. Granted leave of absence for three months from Dec. 19. Dec. 16, 1903.

PERRY, J. C., passed assistant surgeon. Detailed to represent the Service at the "Convention to Consider the Questions Involved in Mosquito Extermination" to be held in New York Dec. 16. Dec. 15, 1903.

GREENE, J B., passed assistant surgeon. Upon being relieved at Cleveland, Ohio, by Passed Assistant Surgeon H. S. Mathewson, to proceed to Habana, Cuba, for duty in office of U. S. Consul-General, relieving Assistant Surgeon F. E. Trotter. Dec. 16, 1903.

MATHEWSON, H. S., passed assistant surgeon. Relieved from duty at Detroit, Michigan, and directed to proceed to Cleveland, Ohio, and assume command of the service at that port, relieving Passed Assistant Surgeon J. B. Greene. Dec. 16, 1903.

VON EZDORF, R. H., passed assistant surgeon. Relieved from duty at Laredo, Texas, and directed to proceed to Washington, D. C., and report at Bureau. Dec. 15, 1903.

BILLINGS, W. C., assistant surgeon. Granted leave of absence for fourteen days from Dec. 13. Dec. 14, 1903.

KERR, J. W., assistant surgeon. To proceed to Ellis Island, New York, N. Y., and report to Surgeon G. W. Stoner for duty. Dec. 12, 1903.

GOLDBERGER, Jos., assistant surgeon. To report to Director of Hygienic Laboratory for duty. Dec. 8, 1903.

TROTTER, F. E., assistant surgeon. Upon being relieved from duty at Habana, Cuba, by Passed Assistant Surgeon J. B. Greene, to proceed to San Francisco, Cal., and report to medical officer in command for duty and assignment to quarters. Dec. 16, 1903.

LLOYD, B. J., assistant surgeon. To proceed to Concord, Cal., for special temporary duty. Dec. 15, 1903.

STIMSON, A. M., assistant surgeon. Granted leave of absence for seven days from Dec. 8, 1903, under paragraph 191 of the regulations.

FOSTER, A. D., assistant surgeon. To proceed to Ellis Island, New York, and report to Surgeon G. W. Stoner for temporary duty. Dec. 11, 1903.

BALLARD, J. C., acting assistant surgeon. Granted leave of absence for five days from Dec. 24. Dec. 16, 1903.

SAFFORD, M. V., acting assistant surgeon. Granted leave of absence for four days from Dec. 14, 1903, under paragraph 210 of the regulations.

STEARNS, H. H., acting assistant surgeon. Granted leave of absence for fourteen days from Dec. 18. Dec. 15, 1903.

MAGUIRE, E. S., pharmacist. Department letter of Nov. 21, granting Pharmacist Maguire leave of absence for thirty days from Nov. 1, 1903, amended so as to read thirty days from Dec. 1. Dec. 12, 1903.

GIBSON, R. H., pharmacist. Granted leave of absence for eight days from Dec. 24. Dec. 15, 1903.

RYDER, L. W., pharmacist. Department letter of Dec. 9, granting Pharmacist Ryder leave of absence for fifteen days from Dec. 10, 1903, amended to read fifteen days from Dec. 7. Dec. 11, 1903.

BOARD CONVENED.

Board convened to meet at Philadelphia, Pa., Dec. 17, 1903, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon Fairfax Irwin, Chairman. Assistant Surgeon W. A. Korn, Recorder.

APPOINTMENTS.

J. N. COOLIDGE, M.D., has been appointed an assistant visiting physician at the Boston City Hospital.

EDWARD N. LIBBY, M.D., has been appointed a physician to medical out-patients at the Boston City Hospital.

S. G. UNDERHILL, M.D., has been appointed as an assistant to the superintendent at the Boston City Hospital.

CHANGES IN THE MEDICAL CORPS OF THE NAVY FOR THE WEEK ENDING DEC. 26, 1903.

W. A. MCCLURG, medical inspector. Ordered to the Bureau of Medicine and Surgery, Navy Department.

M. K. JOHNSON, surgeon. Detached from the naval hospital, New York, N. Y., and ordered to the "Tacoma."

L. H. SCHWERIN, acting assistant surgeon. Detached from the "Southery" and ordered to the "Abarenda."

L. W. SPRATLING, surgeon. Detached from the "Hancock" and ordered to the navy yard, New York, for special temporary duty at the naval laboratory.

D. N. CARPENTER, surgeon. Detached from the naval hospital, Washington, D. C., and ordered to the "Dixie" for duty with the Panama marine brigade.

L. W. SPRATLING, surgeon. Detached from the naval laboratory, Brooklyn, N. Y., and ordered to the "Dixie" for duty with the Panama marine brigade.

G. L. ANGENY, passed assistant surgeon. Detached from the naval hospital, Philadelphia, Pa., and ordered to the "Dixie" for duty with the Panama marine brigade.

RECENT DEATHS.

DANIEL E. KISSAM, M.D. Dr. Daniel Embury Kissam, formerly a surgeon of note in Brooklyn, died at his residence at Huntington, Long Island, on Dec. 23. He was a native of New York City, and was born Oct. 3, 1817. From 1848 to 1888 he practised in Brooklyn, where he was visiting surgeon to the Brooklyn Hospital. During the civil war he served as a surgeon in the army.

HORACE C. TAYLOR, M.D. Dr. Horace Clifton Taylor of Brocton, Chautauqua County, N. Y., died on Dec. 21, at the age of ninety years. He served eleven years as county superintendent of the poor, and was well known as a writer on the care of the dependent classes.

PROFESSOR FRANCES E. WHITE, for many years professor of physiology at the Woman's Medical College of Pennsylvania, died in Jamaica Plain, Mass., Dec. 29. She had devoted herself during her life to the scientific side of medicine and was well known as a leading woman physician.

JOSIAH LITTLE HALE, M.D., M.M.S.S., died in Brookline, Dec. 21, 1903.

WILLIAM JOSHUA WEEKS, M.D., M.M.S.S., died in Malden, Dec. 23, 1903.

BOOKS AND PAMPHLETS RECEIVED.

A Reference Handbook of the Medical Sciences, embracing the entire range of Scientific and Practical Medicine and Allied Science. By various writers. A new edition, completely revised and rewritten. Edited by Albert H. Buck, M.D. Vol. VII. Illustrated. New York: William Wood & Co. 1904.